Performance Review Body
Annex II – Member States' detailed analysis for experts

The 2020 monitoring consists of five reports:

1. PRB Monitoring Report 2020
2. Annex I – Member States' factsheets
3. **Annex II – Member States' detailed analysis for experts**
4. Annex III – Safety report
5. Annex IV – Investments report

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Table of Contents

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1 Introduction

This document is Annex II to the PRB Monitoring Report 2020. It presents a summary of the Union-wide and local performance in 2020 for each key performance indicator (KPI), followed by detailed analyses at Union-wide and local levels in each of the four key performance areas.

It has been prepared in a collaboration between the Performance Review Unit (PRU) of Eurocontrol and the European Union Aviation Safety Agency (EASA).

The legal basis for monitoring the performance of the air traffic management in the Single European Sky (SES) area during the third reference period (RP3) is defined in Articles 11, 12, 14, 15 and 16 of Regulation (EC) No 549/2004 (the Framework Regulation), and in the Implementing Regulation (EU) No 2019/317 (the Performance and Charging Regulation).

The European Commission adopted the Union-wide targets and alert thresholds for RP3 in 2019 (Commission Implementing Decision (EU) 2019/903 of 29 May 2019) and the Member States submitted their draft performance plans for RP3 at the end of the year, which were then assessed by the European Commission.

However, both the Union-wide performance targets and the draft performance plans were prepared and adopted before the outbreak of the COVID-19 pandemic and therefore do not reflect the significant changes arising from the crisis. As a result, the European Commission adopted exceptional measures for RP3 (Commission Implementing Decision (EU) 2020/1627 of 3 November 2020), establishing a number of derogations from Regulation (EU) 2019/317, in particular:

- The adoption of revised union-wide targets for RP3 by 1 May 2021, following the provision of revised initial cost and traffic forecasts by the NSAs in December 2020;
- The amendment of the cost-efficiency KPI to take account of years 2020 and 2021 as a combined value for the two years and its retroactive application from the beginning of RP3;
- The amendment of the charging provisions for years 2020 and 2021 in respect of the implementation of incentive schemes and risk sharing mechanisms, as well as unit rate adjustments stemming from those two years.
- The submission by the Member States and the Network Manager of new draft performance plans containing revised targets for RP3 ensuring consistency with the revised Union-wide performance targets, by 1 October 2021.

The European Commission adopted the revised Union-wide targets for RP3 in June 2021 (Commission Implementing Decision (EU) 2021/891 of 2 June 2021). Targets are revised for years 2021 to 2024 in the KPAs of safety, environment and capacity and for 2020 to 2024 in the KPA of cost-efficiency. Member States are currently preparing their revised draft performance plans and carrying out the related consultations with the stakeholders in view of the submission of the plans by 1 October 2021.

This special situation brought about by the COVID crisis and the exceptional measures has an impact on the 2020 performance monitoring for the cost-efficiency targets, which cannot be measured against 2020 obsolete planned value and which will be monitored for the combined year 2020-2021 in 2022 once the actual 2021 data has become available. The monitoring in the KPA of cost-efficiency in this 2020 report therefore consists of the analysis of the variations between 2019 and 2020 actual data. For the sake of completeness, the variations against the initial data for RP3 provided by the NSAs in December 2020 are also presented.

The provisional targets proposed by the States in the KPAs of safety, environment and capacity for 2020 in their draft initial performance plans submitted in 2019 are still applicable and subject to monitoring and presented in the report.

2 Summary of the performance in 2020 at Union-wide level

Table 1 shows the Union-wide performance in 2020 against the targets for the Key Performance Areas of Environment and Capacity.

KPI (UNION-WIDE)	2020		
	EU TARGET	PERFORMANCE	Actual vs target
ENVIRONMENT			
KEA (horizontal en route flight efficiency – actual route)	*2.53%*	2.51%	✓
CAPACITY			
Average en route air traffic flow management (ATFM) delay per flight (Minutes)	0.9	0.36	✓

Table 1 - Actual performance at Union-level (2020) – Environment and Capacity.

Table 2 presents the average real en-route actual unit cost recorded at Union-wide level for 2020 compared to the actual value for 2019.

	2019	2020	2020 vs 2019
COST-EFFICIENCY			
Average actual unit cost for en route ANS ($€_{2017}$)	*49.37*	114.83	+132.6%

Table 2 - Actual performance at Union-level (2020) – Cost-efficiency.

3 Summary of the performance in 2020 at local level (FAB/national)

Table 3 shows the operational performance in 2020 against the targets for the Key Performance Areas of Environment and Capacity at local level.

State / FAB	Provisional Targets								
	Flt Efficiency (% KEA)			En route delay (minute / flight)			Arrival delay (minute / flight)		
	Target	Actual		Target	Actual		Target	Actual	
Austria	1,90	1,92	✗	0,95	0,00	✓	1.25	0.36	✓
Bulgaria	1,95	2,55	✗	0,17	0,00	✓	N/A	N/A	
Croatia	1,49	1,47	✓	0,43	0,00	✓	N/A	N/A	
Cyprus	4,10	3,89	✓	1,00	0,20	✓	N/A	N/A	
Czech Republic	2,26	2,18	✓	0,20	0,00	✓	0.37	0.07	✓
Denmark	1,21	1,12	✓	0,07	0,00	✓	0.10	0.00	✓
Estonia	1,33	1,21	✓	0,05	0,00	✓	0.00	0.00	✓
Finland	0,97	0,88	✓	0,09	0,00	✓	0.39	0.20	✓
Greece	1,94	2,51	✗	0,34	0,02	✓	1.20	0.04	✓
Hungary	1,45	1,51	✗	0,90	0,00	✓	0.05	0.08	✗
Ireland	1,56	1,11	✓	0,07	0,00	✓	0.25	0.11	✓
Italy	2,83	2,85	✗	0,25	0,01	✓	0.41	0.04	✓
Latvia	1,30	1,24	✓	0,06	0,00	✓	0.02	0.00	✓
Lithuania	1,90	1,90	✓	0,05	0,00	✓	N/A	N/A	
Malta	1,46	2,53	✗	0,02	0,00	✓	0.00	0.00	✓

State / FAB	Provisional Targets								
	Flt Efficiency (% KEA)			En route delay (minute / flight)			Arrival delay (minute / flight)		
	Target	Actual		Target	Actual		Target	Actual	
Norway	1,43	1,52	✘	0,08	0,01	✓	0.50	0.03	✓
Poland	1,85	1,67	✓	0,30	0,00	✓	0.45	0.02	✓
Portugal	1,76	1,79	✘	0,23	0,25	✘	3.12	0.97	✓
Romania	1,55	2,17	✘	0,14	0,00	✓	0.50	0.00	✓
Slovakia	2,10	2,22	✘	0,60	0,00	✓	N/A	N/A	
Slovenia	1,68	1,51	✓	0,23	0,00	✓	N/A	N/A	
Spain	3,23	3,11	✓	0,47	0,40	✓	0.91	0.30	✓
Sweden	1,26	1,03	✓	0,12	0,01	✓	0.35	0.00	✓
FABEC	3,25	2,94	✓	3,45	0,42	✓	N/A	N/A	
Belgium		3,37			0,05		1.82	0.38	✓
France		3,25			0,60		0.40	0.30	✓
Germany		2,37			0,17		0.66	0.10	✓
Luxembourg		N/A			N/A		0.12	0.06	✓
Netherlands		2,63			0,01		2.00	1.26	✓
Switzerland		4,21			0,04		1.94	0.55	✓

Table 3 - Actual performance at local level (2020) – Environment and Capacity.

N/A: No airports included in the Performance Plan / Indicator not monitored at FAB level.

NB: FABEC only set FAB targets, not national targets for both en route capacity and for flight efficiency.

Cost-efficiency:

Figure 1 (for en-route) and Figure 2 (for terminal) shows the difference between the actual unit costs for 2020 and the actual unit costs for 2019 calculated according to the RP3 rules, as well as the drivers for this evolution in terms of costs and traffic.

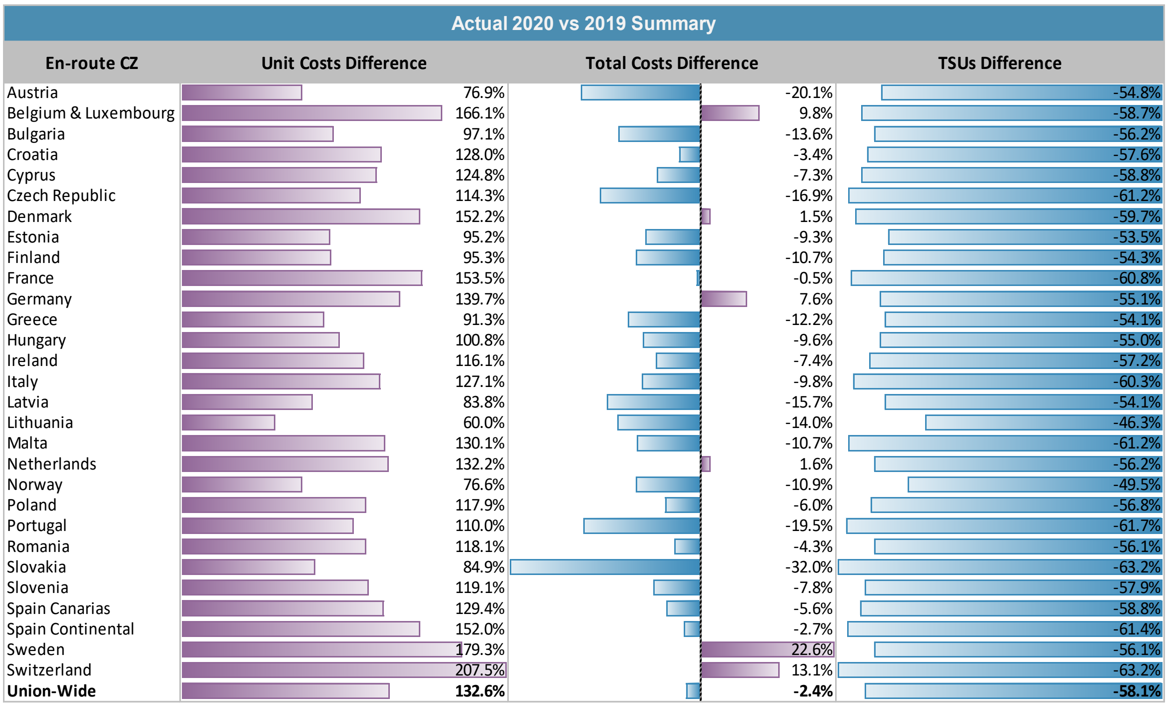

Figure 1 - Actual En route Unit Costs in 2020 vs 2019

Actual 2020 vs 2019 Summary			
Terminal CZ	**Unit Costs Difference**	**Total Costs Difference**	**TNSUs Difference**
Austria	105.1%	-21.0%	-61.5%
Belgium Brussels	102.8%	-8.9%	-55.1%
Czech Republic	170.9%	-15.8%	-68.9%
Denmark	161.5%	-3.8%	-63.2%
Estonia	114.3%	-11.6%	-58.8%
Finland	148.5%	-12.3%	-64.7%
France zone 1	116.2%	-4.6%	-55.9%
France zone 2	116.0%	-3.5%	-55.3%
Germany	71.0%	-27.8%	-57.8%
Greece	77.1%	-20.6%	-55.2%
Hungary	137.6%	-7.6%	-61.1%
Ireland	110.2%	-21.0%	-62.4%
Italy zone 1	173.1%	-14.2%	-68.6%
Italy zone 2	128.4%	-5.1%	-58.5%
Latvia	113.8%	-12.1%	-58.9%
Luxembourg	53.2%	9.4%	-28.6%
Malta	137.5%	-6.7%	-60.7%
Netherlands	80.1%	-8.0%	-48.9%
Norway	65.6%	-13.1%	-47.5%
Poland zone 1	87.0%	-24.3%	-59.5%
Poland zone 2	109.1%	-5.9%	-55.0%
Portugal	110.8%	-12.1%	-58.3%
Romania	122.0%	-5.3%	-57.3%
Spain	120.9%	-8.6%	-58.6%
Sweden	264.7%	31.3%	-64.0%
Switzerland	178.0%	5.8%	-62.0%
Union-wide	111.5%	-10.5%	-57.7%

Figure 2 - Actual Terminal Unit Costs in 2020 vs 2019

Annual Monitoring Report 2020

Union-wide view

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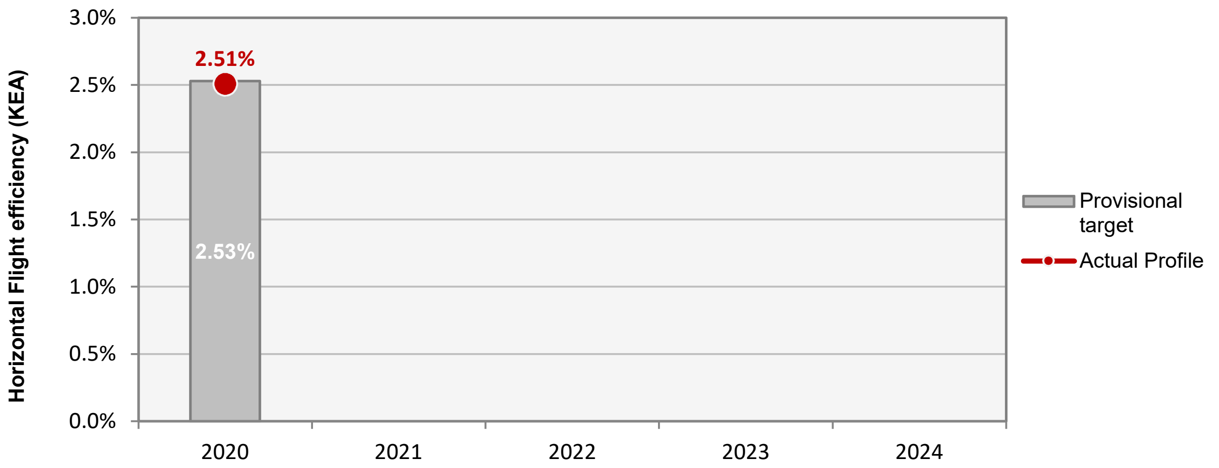
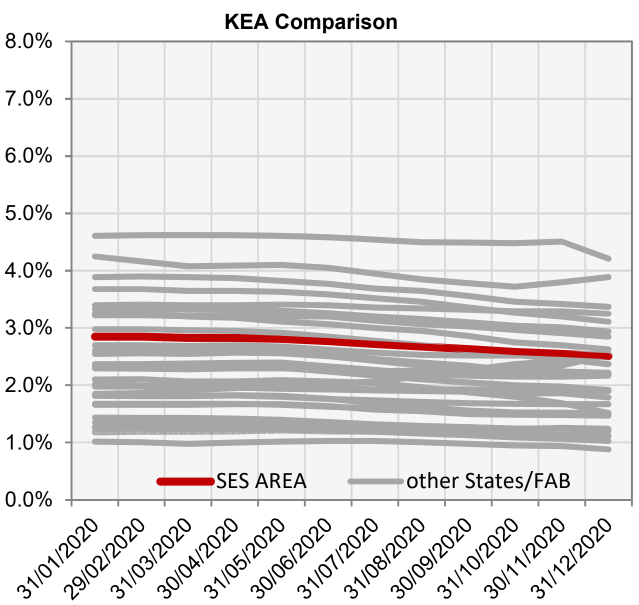
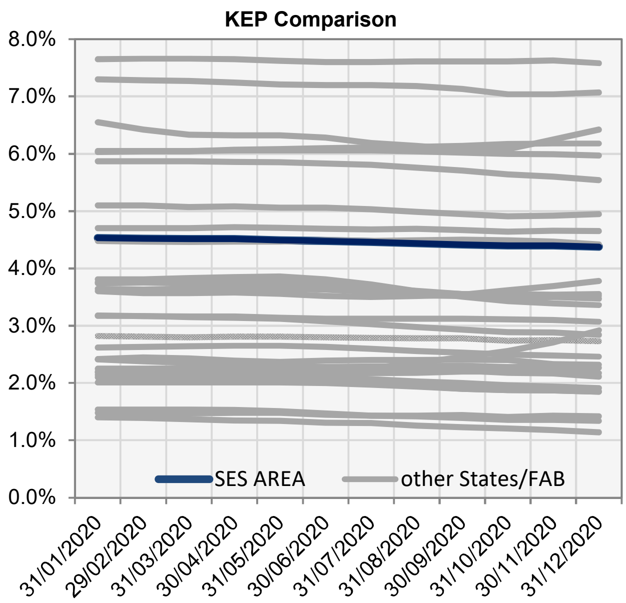
KEA	2020	2021	2022	2023	2024
Provisional target	2.53%				
Actual performance	2.51%				



End of month indicators evolution in 2020

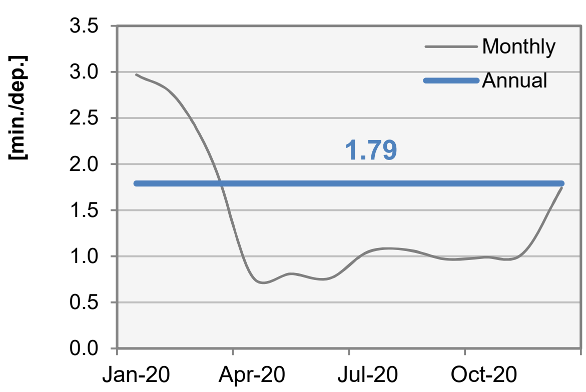
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.85%	2.85%	2.83%	2.83%	2.81%	2.77%	2.72%	2.68%	2.63%	2.58%	2.55%	2.51%
KEP	4.53%	4.52%	4.51%	4.51%	4.49%	4.48%	4.46%	4.44%	4.42%	4.40%	4.40%	4.38%
KES	4.18%	4.17%	4.16%	4.15%	4.13%	4.11%	4.09%	4.07%	4.04%	4.01%	4.00%	3.98%

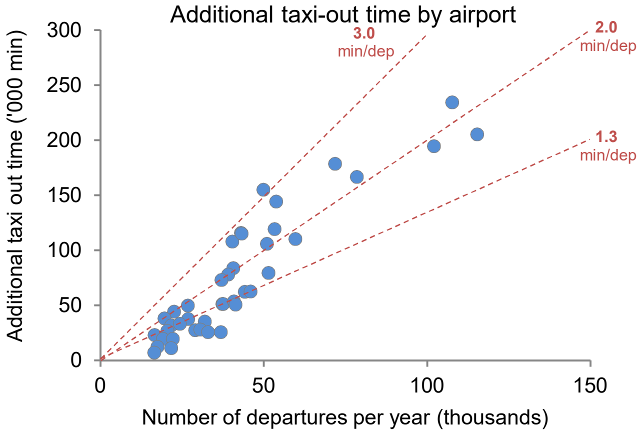




The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

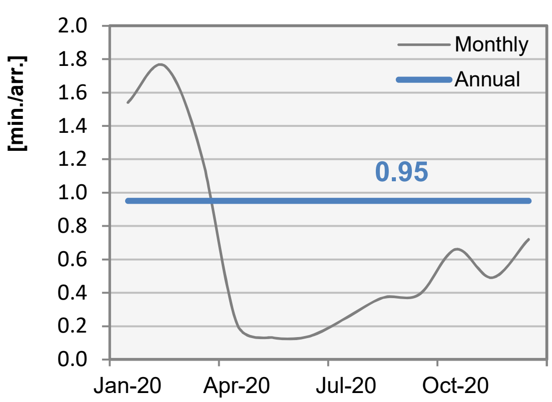
Additional Taxi-Out Time (SES RP3 airports >80k)

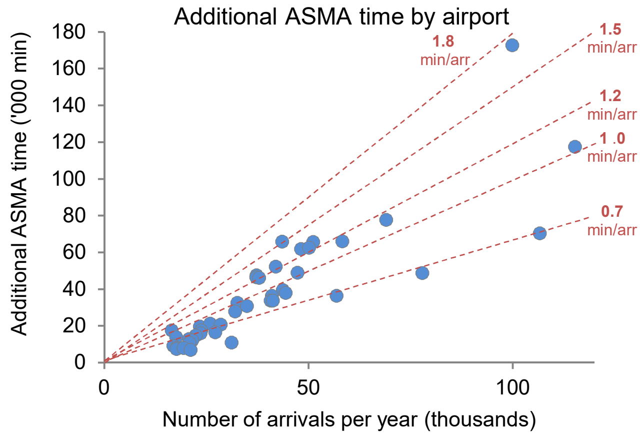




In 2020, the average additional taxi out time at the SES RP3 airports (>80k) was 1.79 minutes per departure. At airport level, average additional taxi-out time varied between 0.43 for Toulouse (LFBO) and 3.1 minutes for Rome (LIRF). No data was available for Bergen (ENBG) and Marseille (LFML) airport.

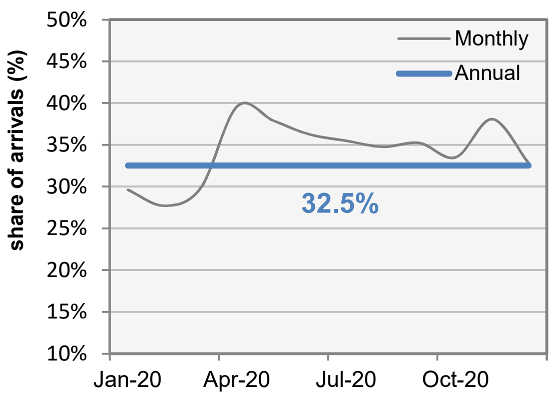
Additional ASMA Time (SES RP3 airports >80k)

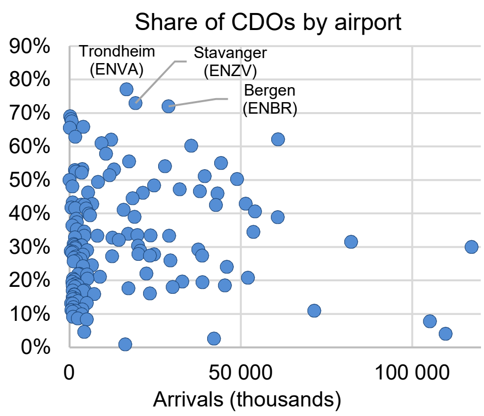




In 2020, the average additional ASMA time at the SES RP3 airports (>80k) was 0.95 minutes per arrival. At airport level, average additional taxi-out time varied between 0.33 for Lyon (LFLL) and 1.73 minutes for Frankfurt (EDDF). No data was available for Bergen (ENBR).

Share of arrivals applying CDO (SES RP3 airports)





In 2020, 32.5% of the arrivals at the SES RP3 airports applied Continuous Descent Operations (CDO). As a result of the significantly reduced traffic levels as of April 2020, the share of arrivals applying CDO increased notably but decreased again in the second half of 2020. At airport level, the share of arrivals applying CDO varied from close to zero to above 70% for the three Norwegian airports Trondheim, Stavanger and Bergen.

Update on Military dimension of the plan

The information provided by Member States is inconsistent and rarely mentions how enhanced civil military cooperation will improve capacity or environmental performance.

Military - related measures implemented or planned to improve capacity

N/A

PI#6 Effective use of reserved or segregated airspace - Union wide level

Ratio PI#6	2020	2021	2022	2023	2024
Union - wide	74%				

The Network Manager reported to the PRB that this value is for 33 EUROCONTROL NM States that are sending AUP/UUP as the main tool for FUA implementation.

It should be noted that there is no requirement for Member States to inform the Network Manager about the starting or ending of activity causing the segregation or restriction of airspace.

PI#6 Effective use of reserved or segregated airspace (per ACC)

Despite the legislation requiring the monitoring and reporting of this PI at ACC level, only a handful of Member States actually do so. Reporting according to Flight Information Region (FIR) is more common.

Initiatives implemented or planned to improve PI#6

Few States provided information on this.

PI#7 Rate of planning via available airspace structures - Union wide level

Ratio PI#7	2020	2021	2022	2023	2024
Union - wide	94%				

This figure is reported by the Network Manager.

PI#7 Rate of planning via available airspace structures (per ACC)

Similarly to PI#6, very few States (4) are able to report on this PI, with most reporting a lack of data availability.

Initiatives implemented or planned to improve PI#7

Few States provided information on this.

PI#8 Rate of using available airspace structures - Union wide level

Ratio PI#8	2020	2021	2022	2023	2024
Union - wide	58%				

This figure is reported by the Network Manager.

PI#8 Rate of using available airspace structures (per ACC)

Similarly to PI#6, very few States (4) are able to report on this PI, with most reporting a lack of data availability.

Initiatives implemented or planned to improve PI#8

Few States provided information on this.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Union wide Target	0.90					The en route capacity target was achieved in 2020.
Actual performance	0.36					

Union wide Performance Indicator: Percentage of flights with ATFM delay greater than 15 minutes.

Out of 4.4 million flights during 2020, only 31 thousand received ATFM regulations with a Calculated Take Off Time (CTOT) more than fifteen minutes after their Estimated Take-Off Time (ETOT).

The percentage of aircraft with an ATFM delay of greater than 15 minutes in 2020 was 0.7%.

Summary of capacity performance

The Union-wide target for en route capacity was achieved in 2020. The number of flights decreased by 56% from 2019 levels due to the COVID 19 pandemic.

Capacity Planning

Capacity planning has been significantly disrupted due to the COVID 19 pandemic, which does not augur well for future capacity performance.

Several ANSPs report that the training of ATCOs has been affected by sanitary requirements and that additionally the massive drop in demand has led to efforts to reduce costs including re-evaluating the need to provide additional capacity going forward. It is difficult to determine the likely capacity situation in the short to medium future as traffic levels rise again.

ATCO in OPS (FTE)

Not all ANSPs provided information regarding the ATCOs in operations, either planned or actual. In addition, several ANSPs reported planned ATCO FTEs for 2020 that showed a difference from the numbers provided in their RP3 performance plan submitted in 2019. These cases are highlighted in the relevant sections with figures from both performance plan and monitoring report listed.

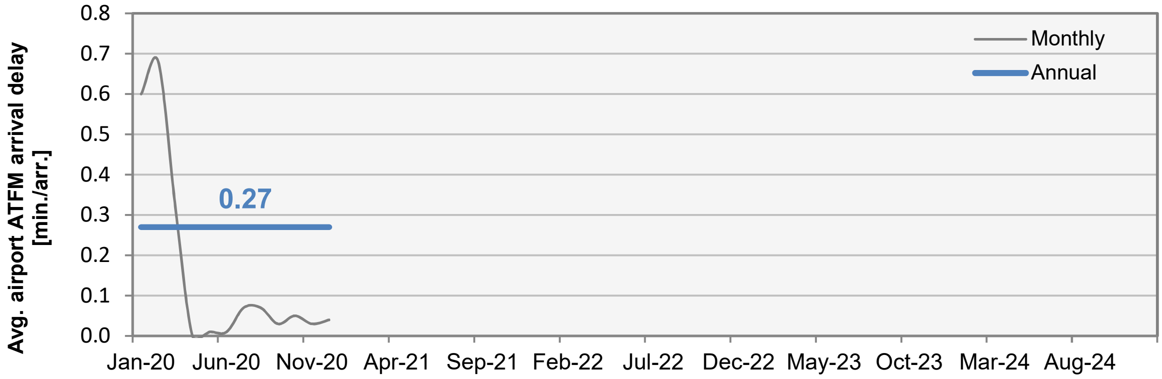
The use of FTEs means that changes to working hours, such as introduced by a large number of ANSPs during the pandemic, may show up as a change in the FTEs. For example, having 2 ATCOs working half time may show up as 1 FTE.

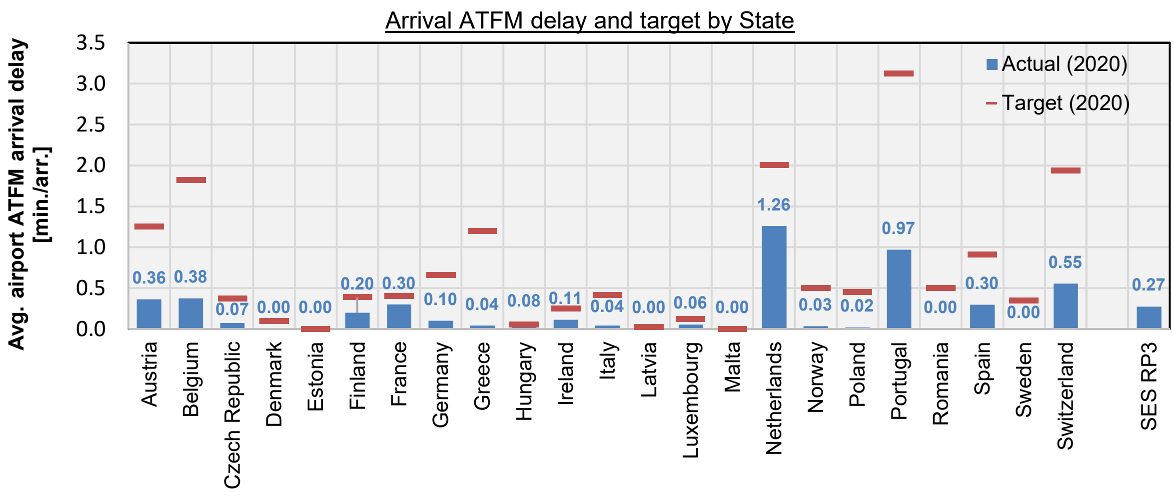
Incentive scheme

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

Information provided in the following sections are for illustrative purposes only.

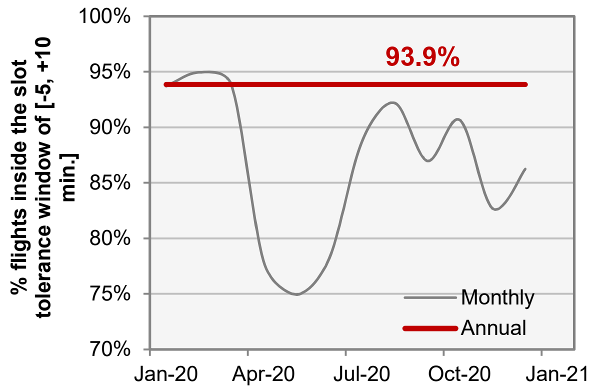
Arrival ATFM Delay (SES RP3 airports)

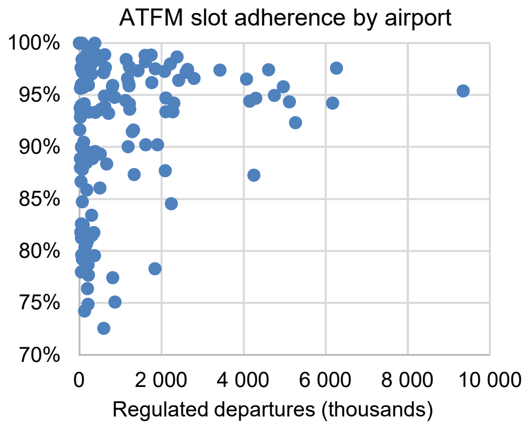




In 2020, the average arrival ATFM delay at the SES RP3 airports was 0.27 minutes per arrival. With the drastic drop in traffic in April, as a result of the pandemic, airport arrival ATFM delay virtually disappeared. At local level, all but Hungary met their provisional national target on arrival ATFM delay in 2020.

Adherence to ATFM slots (SES RP3 airports)





In 2020, 93.9% of the ATFM regulated flights at the SES RP3 airports departed inside of the slot tolerance window. Slot adherence decreased as of April 2020 following the dramatic drop in traffic but with substantially fewer flights being regulated. ATFM slot adherence also varied notably among airports.

All Causes and ATC Pre-departure Delay (SES RP3 airports >80k)

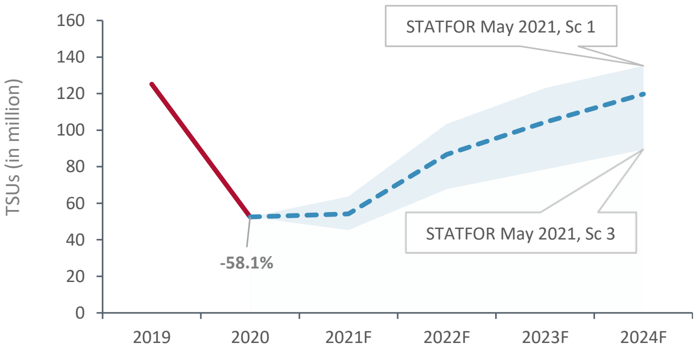
In 2020, total (all causes) delay compared to the scheduled departure time was 10.1 minutes at the SES RP3 airports (>80k). The ATC-pre departure delay at EU wide level is not available due to data quality issues at many airports.

Contextual economic information: en-route air navigation services

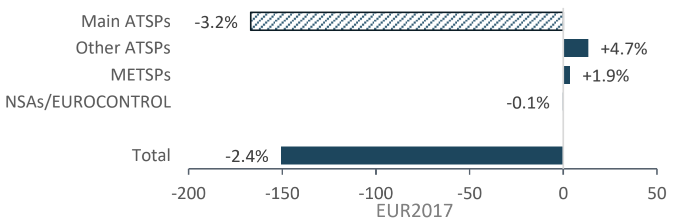
The information provided hereafter is the aggregation of the data submitted in June 2021 for the 29 en-route CZ operated by SES States.

In this year report, the monitoring analysis of the cost-efficiency KPI mainly focuses on the changes between 2019 and 2020 actual costs and service units data. Indeed, following the implementation of the exceptional measures adopted by the EC and the postponment of the RP3 Performance Plans assessment to end 2021, there is no adopted Union-wide cost-efficiency target for the year 2020. It should be noted that for the sake of completeness, the analysis below also shows the changes between 2020 actual data and the initial information on RP3 that was provided in December 2020.

Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Real En-route costs (EUR2017)	6 213 324 967	6 179 127 774	6 028 729 016	-3.0%	-2.4%
Total en-route Service Units (TSUs)	52 089 317	125 158 275	52 500 142	+0.8%	-58.1%
Real en-route unit cost per Service Unit (EUR2017)	**119.28**	**49.37**	**114.83**	**-3.7%**	**+132.6%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zones level

In 2020, actual Union-wide unit costs were lower (-3.7%) than those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+0.8%) actual TSUs and lower (-3.0%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-58.1%) would not be fully recovered by 2024.

Between 2019 and 2020, the en-route unit costs at Union-wide level rose substantially (+132.6% in real terms) mainly due to the exceptional -58.1% traffic reduction. In the meantime, the en-route costs decreased by -2.4% in real terms.

The lower Union-wide en-route costs at CZ level are a combination of the following changes observed for the different entities: the main ATSPs (-3.2%), the other ATSPs operating in the CZs (+4.7%), the MET services providers (+1.9%) and the NSAs/EUROCONTROL (-0.1%). A detailed analysis of the changes in en-route costs at ATSPs level is provided in the box below.

Breakdown of main ATSPs en-route costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	3 469 740 751	3 558 829 478	3 374 442 706	-2.7%	-5.2%
Other operating costs	839 842 383	852 506 348	830 297 367	-1.1%	-2.6%
Depreciation	606 713 246	611 991 748	594 278 832	-2.0%	-2.9%
Cost of capital	272 718 432	274 199 756	236 738 359	-13.2%	-13.7%
Exceptional costs	79 377 333	-26 981 964	63 795 815	-19.6%	+336.4%
VFR exempted flights	-18 730 792	-22 296 966	-18 143 653	-3.1%	-18.6%
Total Main ATSPs en-route costs	**5 249 661 354**	**5 248 248 400**	**5 081 409 426**	**-3.2%**	**-3.2%**

Analysis at main ATSPs level

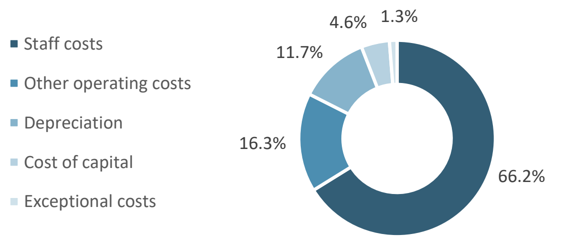
In 2020, actual Union-wide en-route ATSPs costs were lower (-3.2%) than those reported in the initial plans submitted in December 2020.

As indicated in the text box above, actual 2020 Union-wide en-route costs are lower (-3.2%, or -166.8 MEUR2017) than those reported in 2019. This results from the combination of:

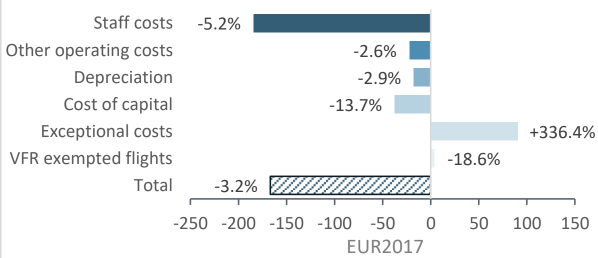
- lower staff costs (-5.2%, or -184.4 MEUR2017);
- lower other operating costs (-2.6%, or -22.2 MEUR2017);
- lower depreciation costs (-2.9%, or -17.7 MEUR2017);
- significantly lower cost of capital (-13.7%, or -37.5 MEUR2017);
- substantially higher exceptional costs (+336.4%, or +90.8 MEUR2017).

In 2020, en-route costs decreased for 24 ATSPs while they rose for DFS, LFV, NAVIAIR, skeyes and Skyguide. After the COVID-19 outbreak a majority of ATSPs implemented short-term measures to control their costs. These measures affected ATSPs staff costs (e.g. reduction in overtime and training expenses), other operating costs (e.g. reduction of maintenance, travel and insurance expenses) and capital-related costs (e.g. postponement of CAPEX). The substantial exceptional costs variation mainly reflects the fact that DFS 2019 en-route cost base comprised subsidies from the Federal Government which were reported as negative exceptional costs. More details on the changes observed for each cost category are available in individual CZs reports.

Main ATSPs actual 2020 en-route costs by nature



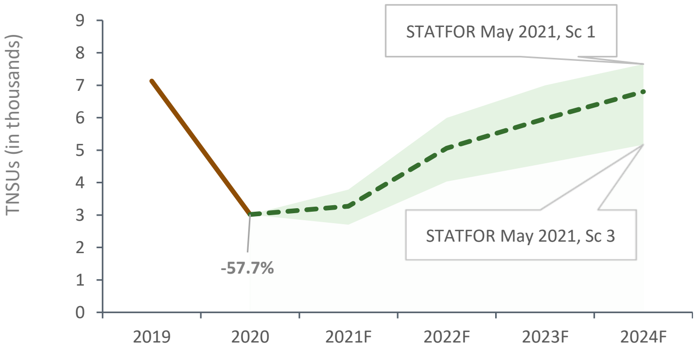
Actual costs variation by nature between 2019 and 2020



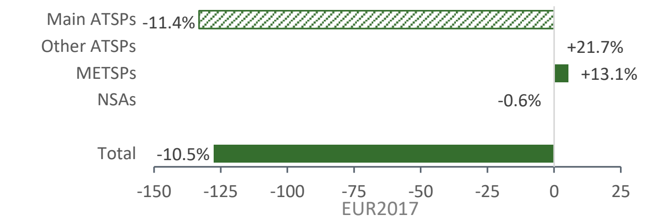
Contextual economic information: terminal air navigation services

The information provided hereafter is the aggregation of the data submitted in June 2021 for the terminal charging zones operated by SES States. As for en-route, the monitoring analysis of the cost-efficiency KPI mainly focuses on the changes between 2019 and 2020 actual costs and terminal service units data. A total of 26 TCZs have been reported (generally one per State, but two TCZs have been reported for Italy, France and Poland), covering a total of 150 airports. Bulgaria, Croatia, Cyprus, Lithuania, Slovakia and Slovenia terminal charging zones are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted for these charging zones which are therefore not included in this analysis.

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real Terminal costs (EUR2017)	1 215 249 686	1 087 524 807	-10.5%
Total Terminal Navigation Service Units	7 130 824	3 016 571	-57.7%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**170.42**	**360.52**	**+111.5%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zones level

Between 2019 and 2020, the terminal unit costs at Union-wide level rose substantially (+111.5% in real terms) mainly due to the exceptional -57.7% traffic reduction. In the meantime, terminal costs reduced (-10.5%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the sharp decrease in terminal TNSUs recorded in 2020 (-57.7%) would not be fully recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: the main ATSPs (-11.4%), the other ATSPs operating in the CZs (+21.7%), the MET service providers (+13.1%) and the NSA (-0.6%). A detailed analysis of the changes in terminal costs at ATSPs level is provided in the box below.

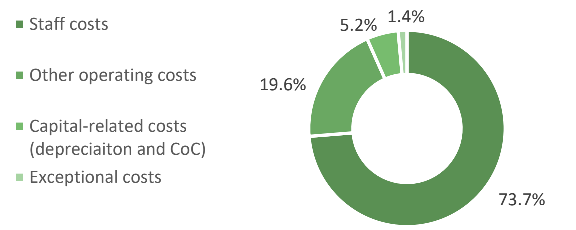
Breakdown of main ATSPs Terminal costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	839 656 691	770 806 395	-8.2%
Other operating costs	209 638 857	205 109 965	-2.2%
Depreciation	123 722 914	130 496 241	+5.5%
Cost of capital	47 408 358	-75 883 649	-260.1%
Exceptional costs	-42 011 634	15 010 032	+135.7%
VFR exempted flights	-14 264 092	-14 524 984	+1.8%
Total main ATSPs terminal costs	**1 164 151 095**	**1 031 014 001**	**-11.4%**

Analysis at main ATSPs level

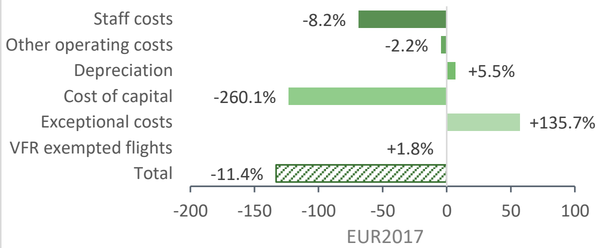
As indicated in the text box above, at Union-wide level, actual 2020 ATSPs costs are significantly lower (-11.4%, or -133.1 MEUR2017) than those reported in 2019. This results from the combination of:
- lower staff costs (-8.2%, or -68.9 MEUR2017);
- slighly lower other operating costs (-2.2%, or -4.5 MEUR2017);
- higher depreciation costs (+5.5%, or +6.8 MEUR2017);
- significantly lower cost of capital (-260.1%, or -123.3 MEUR2017);
- significantly higher exceptional costs (+135.7%, or +57.0 MEUR2017).

In 2020, terminal costs decreased for 24 ATSPs (see **Note 1**) while they rose for ANA, LFV, and Skyguide. This overall cost reduction mainly reflects the measures implemented by a majority of ATSPs to control their costs in order to mitigate the impact of the COVID-19 crisis. This being said, the decrease in terminal ANS costs observed at Union-wide level is also affected by the negative aggregated cost of capital reported for 2020 (-75.9 MEUR2017). This is mainly due to the fact that DFS used a negative rate of return on equity to compute its terminal cost of capital in 2020. As for en-route, the substantial exceptional costs variation mainly reflects the fact that DFS 2019 terminal cost base comprised subsidies from the Federal Government which were reported as negative exceptional costs. More details on the changes observed for each cost category are available in individual CZs reports.

Main ATSPs actual 2020 Terminal costs by nature



Actual costs variation by nature between 2019 and 2020



Aggregated Union-Wide analysis at en-route and terminal level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real En-route costs (EUR2017)	6 179 127 774	6 028 729 016	-2.4%
Real Terminal costs (EUR2017)	1 215 249 686	1 087 524 807	-10.5%
Real gate-to-gate costs (EUR2017)	7 394 377 460	7 116 253 823	-3.8%
En-route share in gate-to-gate costs (%)	**83.6%**	**84.7%**	**+1.4%**

Analysis of costs at gate-to-gate charging zones level

Between 2019 and 2020, gate-to-gate costs at Union-wide level decreased (-3.8%, or -278.1 MEUR2017) in real terms. This results from a reduction in both en-route (-2.4% or -150.4 MEUR2017) and terminal ANS costs (-10.5%, or -127.7 MEUR2017). As a result, the share of en-route in gate-to-gate ANS costs slightly rose from 83.6% in 2019 to 84.7% in 2020.

Breakdown of gate-to-gate ANS costs at main ATSPs level (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	4 398 486 169	4 145 249 101	-5.8%
Other operating costs	1 062 145 205	1 035 407 333	-2.5%
Depreciation	735 714 663	724 775 074	-1.5%
Cost of capital	321 608 114	160 854 710	-50.0%
Exceptional costs	-68 993 598	78 805 847	+214.2%
VFR exempted flights	-36 561 058	-32 668 637	-10.6%
Total main ATSPs gate-to-gate costs	**6 412 399 495**	**6 112 423 426**	**-4.7%**

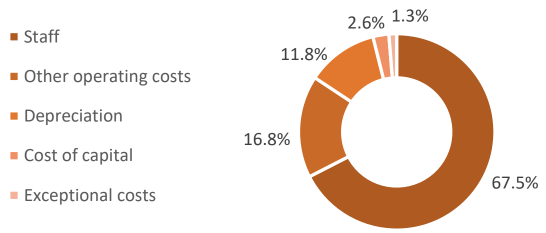
Analysis at main ATSPs level

Actual 2020 Union-wide gate-to-gate costs are lower (-4.7%, or -300.0 MEUR2017) than those reported in 2019. This results from the combination of:

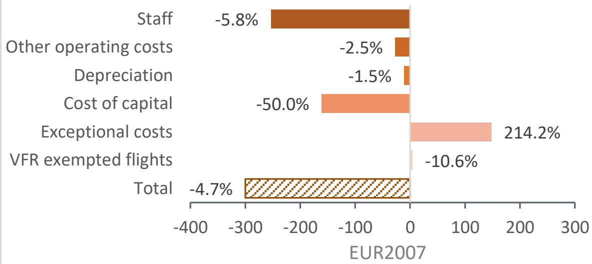
- lower staff costs (-5.8%, or -253.2 MEUR2017);
- lower other operating costs (-2.5%, or -26.7 MEUR2017);
- slightly lower depreciation costs (-1.5%, or -10.9 MEUR2017);
- significantly lower cost of capital (-50.0%, or -160.8 MEUR2017);
- significantly higher exceptional costs (+214.2%, or +147.8 MEUR2017).

Details on the drivers behind the changes observed above are provided in the analysis of the Union-wide en-route and terminal aggregated data.

Main ATSPs actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Technical notes on en-route and terminal data submitted by the States

Note 1: For the purposes of this analysis and to ensure consistency with previous monitoring reports, for terminal ANS, the Swedish main ATSP comprise the costs of LFV and Swedavia although this information is recorded separately in the Terminal Reporting Tables.

Detailed information is available in the analysis at CZ level.

Annual Monitoring Report 2020

Local level view

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Annual Monitoring Report 2020

Local level view

Austria

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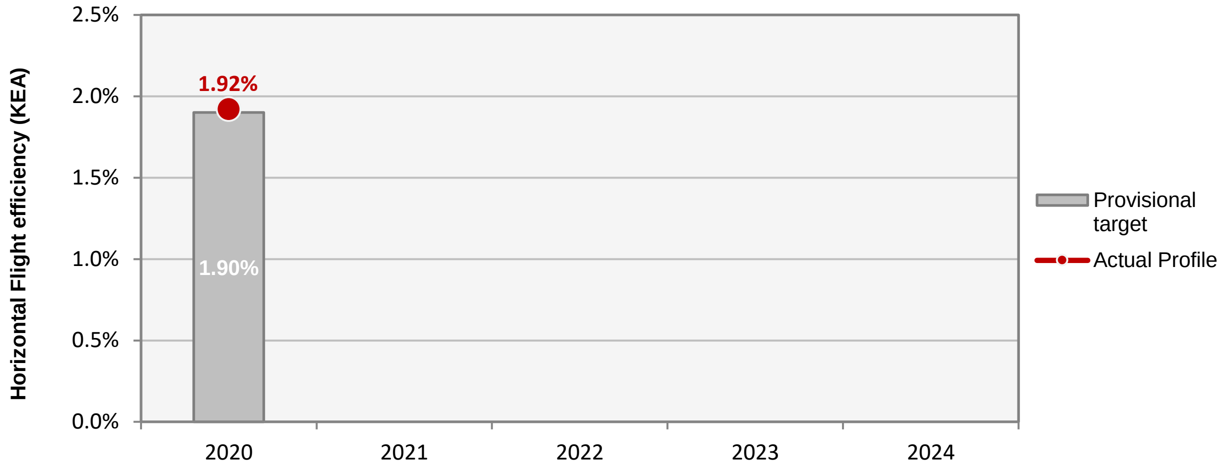
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Austro Control	64	B	B	C	B	B

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

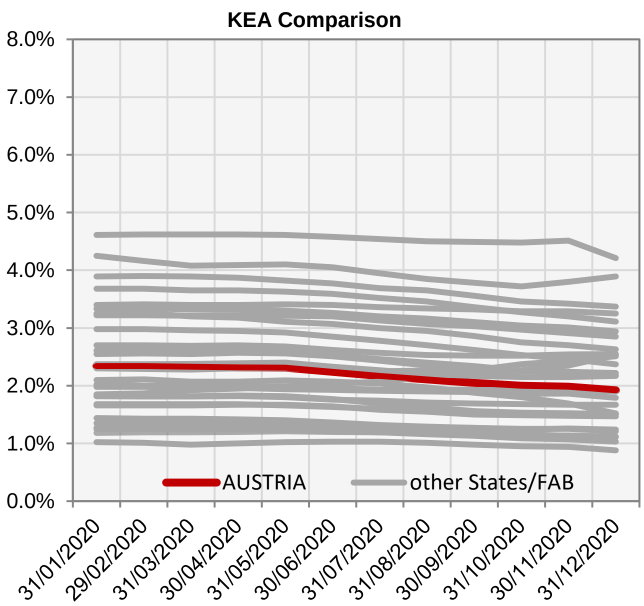
All EoSM components are below 2024 EoSM target levels. Improvements in safety management are still expected in all components during RP3 to achieve 2024 targets.

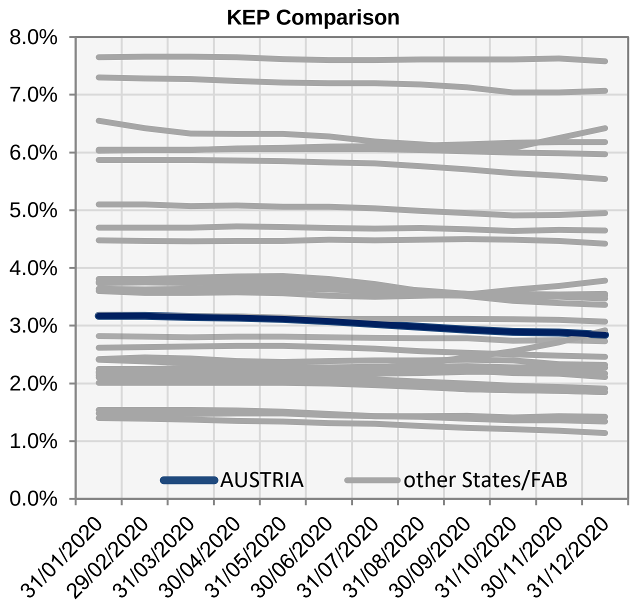
KEA	2020	2021	2022	2023	2024
Provisional target	1.90%				
Actual performance	1.92%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.34%	2.34%	2.33%	2.32%	2.31%	2.24%	2.17%	2.11%	2.05%	2.00%	1.98%	1.92%
KEP	3.17%	3.17%	3.15%	3.14%	3.12%	3.08%	3.03%	2.98%	2.93%	2.89%	2.88%	2.84%
KES	2.93%	2.93%	2.91%	2.90%	2.88%	2.84%	2.80%	2.75%	2.69%	2.65%	2.62%	2.57%



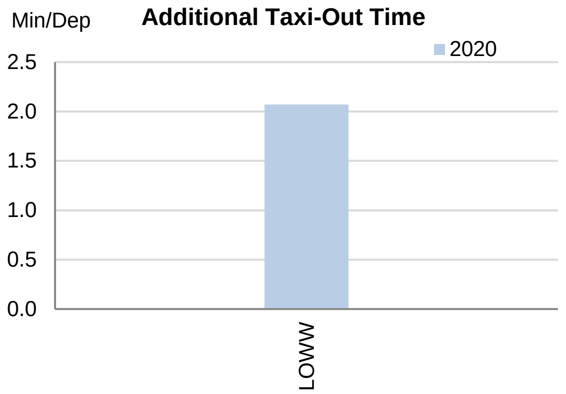


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

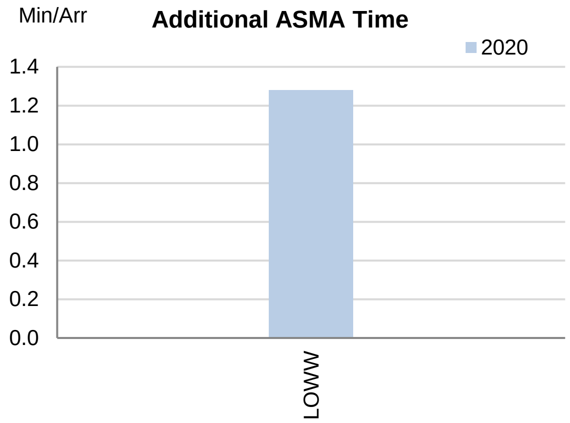
Austria identified six airports as subject to RP3 monitoring. According to the traffic figures at these 6 airports, only Vienna (LOWW) must be monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.
Traffic at the ensemble of these airports decreased by 59% in 2020.
Observed additional times at Vienna, where traffic decreased by 62% in 2020, were very impacted by the traffic reduction. From April to November they were very low (nearly zero some months) although in December there was a significant increase.

2. Additional Taxi-Out Time



Additional taxi-out times at Vienna significantly lowered (LOWW; 2019: 3.1 min/dep.; 2020: 2.07 min/dep.)
This 2.07 min/dep. annual average was driven by very high additional times in January (probably related to de-icing procedures). In fact since April and until November, the additional times were around 1 min/dep.
According to the Austrian monitoring report: *AMAN/DMAN coupling will be considered as one measure to optimize taxi-out times. Moreover, due to the closure of gates and blocked areas, taxi out times take partially longer than in pre-COVID times.*

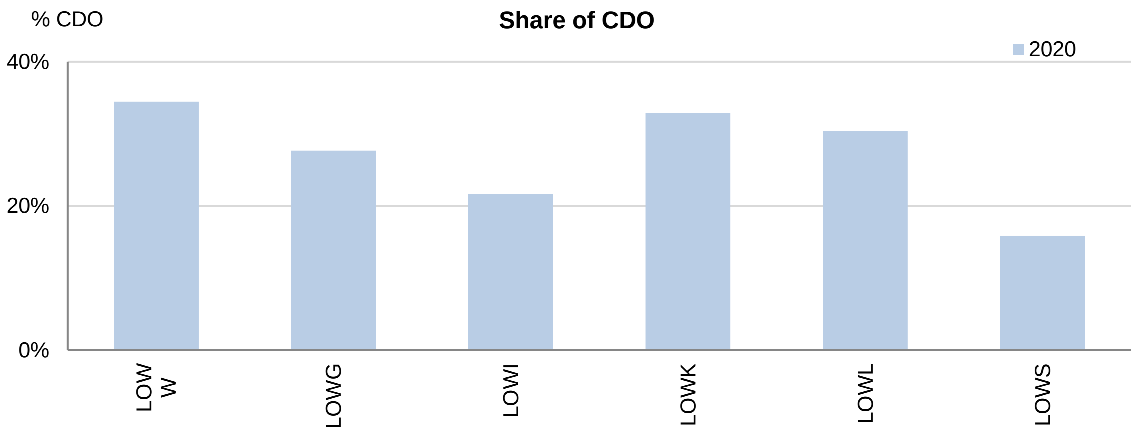
3. Additional ASMA Time



In a similar way to the additional taxi-out times, the additional times in the terminal airspace around Vienna were very impacted by the reduction in traffic as of April, resulting in a 40% reduction in the annual average (LOWW; 2019: 2.13 min/arr.; 2020: 1.28 min/arr.)
The additional ASMA times remained well under 0.5 min/arr. between April and July, and below one min/arr. between August and November.

According to the Austrian monitoring report: *AMAN/DMAN coupling will be considered as one measure to optimize additional time in terminal airspace*

4. Share of arrivals applying CDO



Vienna (LOWW), being the major airport in Austria, has the highest share of CDO flights in Austria: 34.4% which is slightly higher than the overall RP3 value in 2020 (32.5%).
The other airports have 20-30% of CDO flights, except for Salzburg (LOWS): 15.9%.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Vienna-LOWW	2.07					1.28					34%				
Graz-LOWG	-					-					28%				
Innsbruck-LOWI	-					-					22%				
Klagenfurt-LOWK	-					-					33%				
Linz-LOWL	-					-					30%				
Salzburg-LOWS	-					-					16%				

Update on Military dimension of the plan

The impact of military dimension on the environment KPA is very low, due to a very elaborate flexible handling of all flights crossing military areas. There is no impact, from the military dimension, on the capacity KPA so far. The planning of airspace use at pre-tactical level is done via the civil / military joint unit Airspace Management Cell (AMC).

Military - related measures implemented or planned to improve capacity

N/A

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Austria	66%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Vienna	66%				

Initiatives implemented or planned to improve PI#6

Close cooperation between ACC and MIL Control Centre is part of continuous improvement to achieve a dynamic and flexible Use of Airspace

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Austria	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Vienna	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Austria	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Vienna	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.95					
Actual performance	0.00					

NSA's assessment of capacity performance

No ATFM delays were produced due to reduced COVID 19 traffic and optimum measures of arranging operational ATCO resources.

Monitoring process for capacity performance

Apart from permanent ATFCM processes in place, monitoring traffic during the strategic, pre-tactical, and tactical phase, post OPS analyses are regularly [performed].

Capacity Planning

Capacity planning process considering traffic forecasts, ATCO resources, ATS procedures and ATM System evolution is in place and accordingly executed.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	131.6	133.6					Factors influencing no of ATCOs include: maternity leave and return; reduced number of ATCOs starting OJT (due COVID) and unexpected departure of 2,5 FTEs
Planned monitoring report		135.2					
Actual	130.8	128.7					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The Vienna FIR experienced a traffic reduction of 57% from 2019 levels, to 590k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

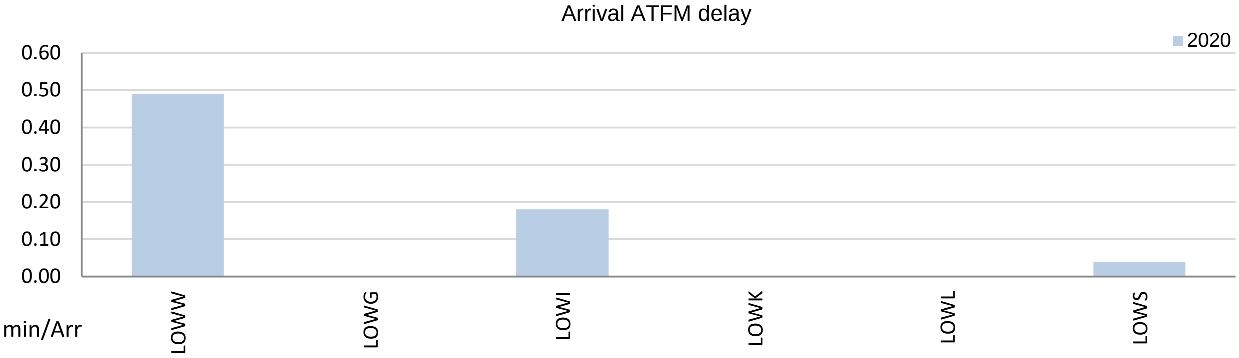
En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.95					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

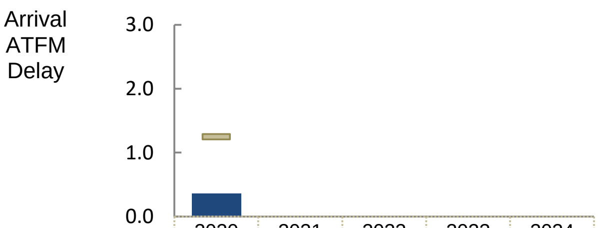
Austria identified six airports as subject to RP3 monitoring. According to the traffic figures at these 4 airports, only Vienna (LOWW) must be monitored for pre-departure delays.
The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly established where required and the monitoring of all capacity indicators can be performed.
Traffic at the ensemble of these airports decreased by 59% in 2020. The drastic reduction in traffic as of the month of April had a direct impact on the ATFM measures at Austrian airports where arrival ATFM delays have totally disappeared since then.
Slot adherence was well above 90% for most of these airports except for Salzburg (LOWS) where it was slightly under 90%.

2. Arrival ATFM Delay



The national average arrival ATFM delay at Austrian airports in 2020 was 0.36 min/arr, significantly lower than the 0.71 min/arr in 2019 (-48%).
Only Vienna, Innsbruck and Salzburg registered delays in 2020, all in the first trimester of the year.
At Vienna (LOWW: 2019: 0.91 min/arr.; 2020: 0.49 min/arr.) 91% of these delays were attributed to weather and 8% to ATC staffing issues.
Delays at Innsbruck and Graz were all related to weather.

3. Arrival ATFM Delay – National Target and Incentive Scheme

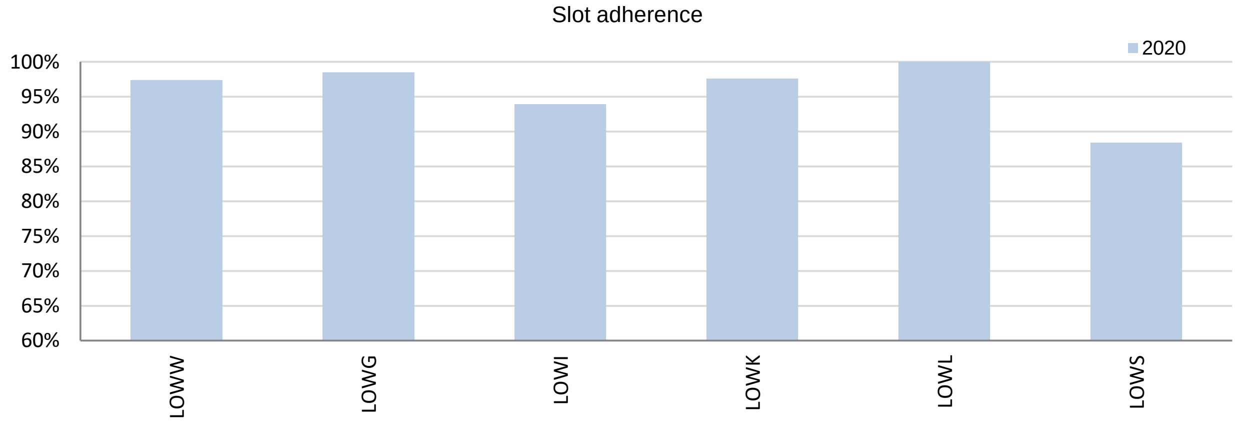


	2020	2021	2022	2023	2024
Actual	0.36				
Target	1.25				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Austrian airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
Most Austrian airports showed adherence above 90% and the national average was 95.8%.With regard to the 4.2% of flights that did not adhere, 3.2% was early and 1% was late.
According to the Austrian monitoring report: *Due to reduced aerodrome capacity down to 40% of the regular capacity offer, revised procedures are currently applied due to COVID19. Details are subject to investigation.*

5. ATC Pre-departure Delay

Vienna is the only Austrian airport subject to the monitoring of this indicator. The performance has notably improved with respect to the previous year (LOWW; 2019: 1.56 min/dep.; 2020: 0.75 min/dep.)

According to the Austrian monitoring report:
Due to reduced aerodrome capacity down to 40% of the regular capacity offer, revised procedures are currently applied due to COVID19.
- limited airport infrastructure due to COVID19 (reduced number of gates) leads to accumulation at the remaining gates
- from some gates aircraft are pushed back on the taxiway which is possibly blocked by taxiing aircraft
- crews calling before the TSAT window are delayed until the beginning of the TSAT window (strict compliance with CDM rules) which might be coded as ATC delay by concerned crews
- in 2020 before COVID19 restrictions the demand has exceeded the capacity at certain times

6. All Causes Pre-departure Delay

Vienna is the only Austrian airport subject to the monitoring of this indicator.
The total (all causes) delay in the actual off block time at Vienna in 2020 was 8.27 min/dep. The higher delays per flight were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances. In November and December there was also a significant increase at most of these airports.

This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

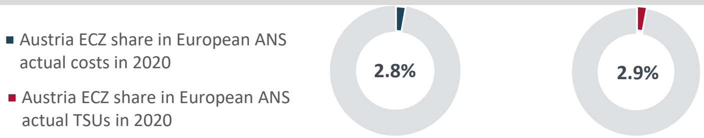
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

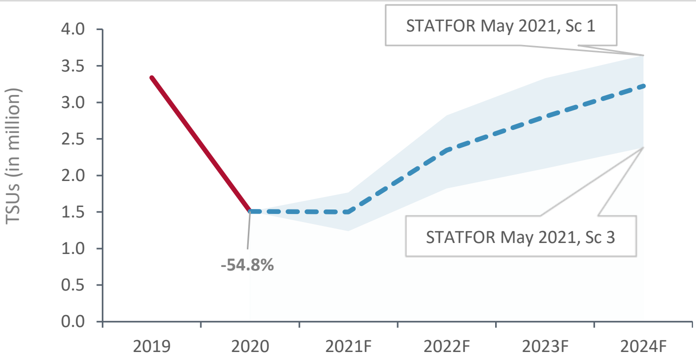
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Vienna-LOWW	0.49					97.4%					0.75					8.27				
Graz-LOWG	0					98.5%					-					-				
Innsbruck-LOWI	0.18					93.9%					-					-				
Klagenfurt-LOWK	0					97.6%					-					-				
Linz-LOWL	0					100.0%					-					-				
Salzburg-LOWS	0.04					88.4%					-					-				

Contextual economic information: en-route air navigation services

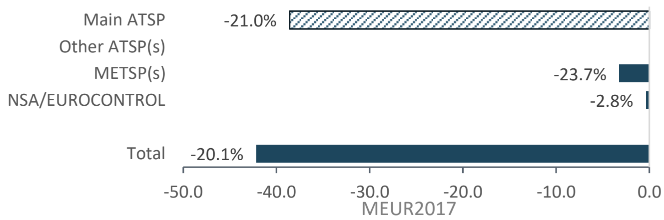
FAB:	FAB CE
Main ATSP:	Austro Control
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	183 380 199	216 362 306	174 545 896	-4.8%	-19.3%
Inflation %	1.2%	1.5%	1.4%	0.2 p.p.	-0.1 p.p.
Real en-route costs (EUR2017)	176 691 468	210 092 391	167 914 396	-5.0%	-20.1%
Total en-route Service Units (TSUs)	1 517 000	3 338 330	1 508 629	-0.6%	-54.8%
Real en-route unit cost per Service Unit (EUR2017)	**116.47**	**62.93**	**111.30**	**-4.4%**	**+76.9%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-4.4%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly lower (-0.6%) actual TSUs and lower (-5.0%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-54.8%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Austria ECZ rose substantially (+76.9% in real terms) mainly due to the exceptional -54.8% traffic reduction. In the meantime, en-route costs significantly reduced (-20.1%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: Austro Control - the main ATSP (-21.0%), the MET service provider (-23.7%) and the NSA/EUROCONTROL (-2.8%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Austro Control en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	100 872 474	133 825 195	91 118 701	-9.7%	-31.9%
Other operating costs	16 960 447	21 767 583	20 042 892	+18.2%	-7.9%
Depreciation	19 662 591	18 991 163	19 534 064	-0.7%	+2.9%
Cost of capital	5 047 526	4 305 460	4 157 187	-17.6%	-3.4%
Exceptional costs	10 906 690	5 618 948	10 884 893	-0.2%	+93.7%
VFR exempted flights	-691 299	-740 229	-563 941	-18.4%	-23.8%
Total Austro Control en-route costs	**152 758 429**	**183 768 121**	**145 173 796**	**-5.0%**	**-21.0%**

Analysis at main ATSP level

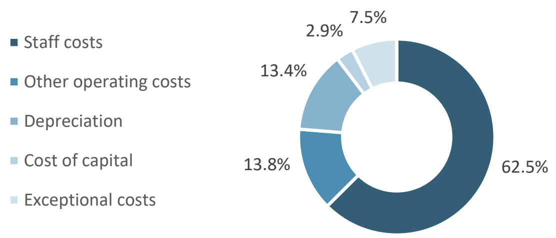
In 2020, Austro Control actual en-route costs were lower (-5.0%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Austro Control actual 2020 en-route costs are significantly lower (-21.0%, or -38.6 MEUR2017) compared to those reported in 2019. This results from the combination of:

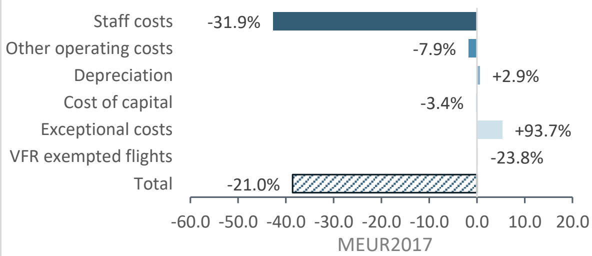
- significantly lower staff costs (-31.9%, or -42.7 MEUR2017);
- lower other operating costs (-7.9%, or -1.7 MEUR2017);
- higher depreciation costs (+2.9%, or +0.5 MEUR2017);
- lower cost of capital (-3.4%, or -0.1 MEUR2017);
- significantly higher exceptional costs (+93.7%, or +5.3 MEUR2017);
- significantly lower deduction for VFR exempted flights (-23.8%).

Austro Control implemented cost-containment measures that affected salaries, overtime payments, recruitment, as well as one-time effects such as public funding of short-time work. Cost-containment measures also affected travel expenses and non-operational training.

Austro Control actual 2020 en-route costs by nature

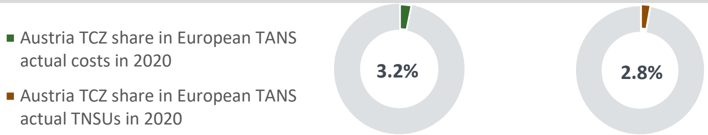


Actual costs variation by nature between 2019 and 2020

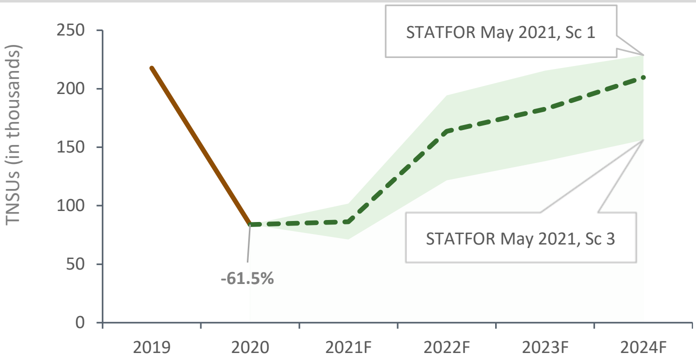


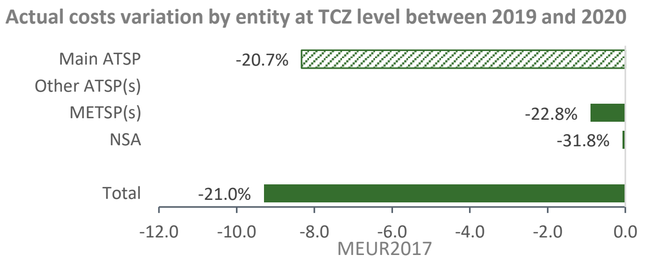
Contextual economic information: terminal air navigation services

Main ATSP:	Austro Control
National currency:	EUR
Number of airports in TCZ:	6



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	45 704 921	36 466 224	-20.2%
Inflation %	1.5%	1.4%	-0.1 p.p.
Real terminal costs (EUR2017)	44 359 264	35 061 142	-21.0%
Total Terminal Navigation Service Units	217 677	83 866	-61.5%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**203.78**	**418.06**	**+105.1%**





Analysis at terminal charging zone level

Austria TCZ comprises 6 airports.

Between 2019 and 2020, the terminal unit costs of Austria TCZ rose substantially (+105.1% in real terms) mainly due to the exceptional -61.5% traffic reduction. In the meantime, terminal costs significantly reduced (-21.0%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-61.5%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: Austro Control - the main ATSP (-20.7%), the MET service provider (-22.8%) and the NSA (-31.8%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

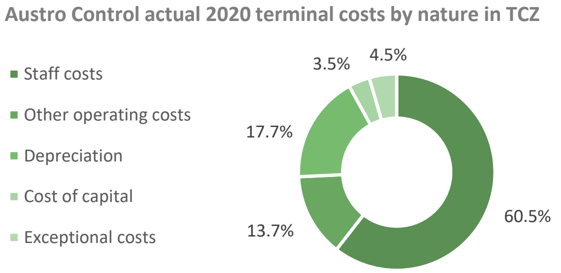
Breakdown of Austro Control Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	28 622 331	19 288 763	-32.6%
Other operating costs	5 001 398	4 374 695	-12.5%
Depreciation	5 414 032	5 644 174	+4.3%
Cost of capital	1 162 024	1 122 252	-3.4%
Exceptional costs	0	1 439 300	n/a
VFR exempted flights	0	0	
Total Austro Control terminal costs in TCZ	**40 199 785**	**31 869 184**	**-20.7%**

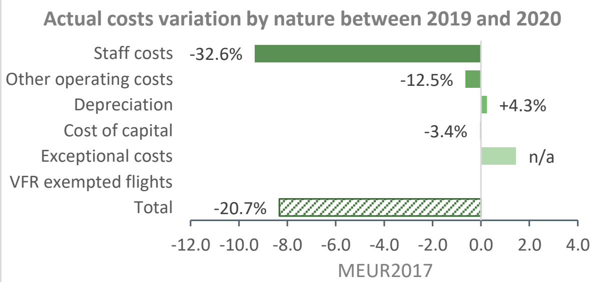
Analysis at main ATSP level

As indicated in the text box above, Austro Control actual 2020 terminal costs in TCZ are significantly lower (-20.7%, or -8.3 MEUR2017) than those reported in 2019. This results from the combination of:

- significantly lower staff costs (-32.6%, or -9.3 MEUR2017);
- significantly lower other operating costs (-12.5%, or -0.6 MEUR2017);
- higher depreciation costs (+4.3%, or +0.2 MEUR2017);
- lower cost of capital (-3.4%, or -0.04 MEUR2017);
- reporting of exceptional item costs (1.4 MEUR2017) in 2020.

Austro Control implemented cost-containment measures that affected salaries, overtime payments, recruitment, as well as one-time effects such as public funding of short-time work. Cost-containment measures also affected travel expenses and non-operational training.





Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	210 092 391	167 914 396	-20.1%
Real terminal costs (EUR2017)	44 359 264	35 061 142	-21.0%
Real gate-to-gate costs (EUR2017)	254 451 655	202 975 538	-20.2%
En-route share in gate-to-gate costs (%)	**82.6%**	**82.7%**	**+0.2 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Austria significantly reduced (-20.2%, or -51.5 MEUR2017) in real terms. This is a combination of a significant reduction (-20.1%, or -42.2 MEUR2017) in en-route and a significant decrease (-21.0%, or -9.3 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (82.7%) remained fairly constant (+0.2 p.p.) compared to the figure reported in 2019 (82.6%).

Breakdown of Austro Control gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	162 447 526	110 407 464	-32.0%
Other operating costs	26 768 981	24 417 587	-8.8%
Depreciation	24 405 195	25 178 238	+3.2%
Cost of capital	5 467 484	5 279 439	-3.4%
Exceptional costs	5 618 948	12 324 193	+119.3%
VFR exempted flights	-740 229	-563 941	-23.8%
Total Austro Control gate-to-gate costs	**223 967 906**	**177 042 980**	**-21.0%**

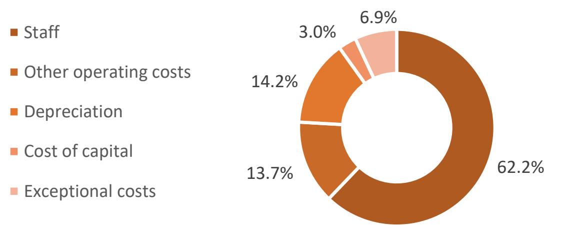
Analysis at main ATSP level

Austro Control actual 2020 gate-to-gate costs are significantly lower (-21.0%, or -46.9 MEUR2017) than those reported in 2019. This results from the combination of:

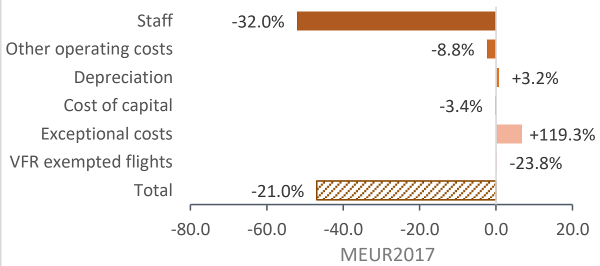
- significantly lower staff costs (-32.0%, or -52.0 MEUR2017);
- lower other operating costs (-8.8%, or -2.4 MEUR2017);
- higher depreciation costs (+3.2%, or +0.8 MEUR2017);
- lower cost of capital (-3.4%, or -0.2 MEUR2017);
- significantly higher exceptional costs (+119.3%, or +6.7 MEUR2017);
- significantly lower deduction for VFR exempted flights (-23.8%).

Details on the drivers behind the changes observed above are provided in the respective analyses of Austro Control at en-route and terminal charging zone level.

Austro Control actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Austria

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Annual Monitoring Report 2020
Local level view
Bulgaria

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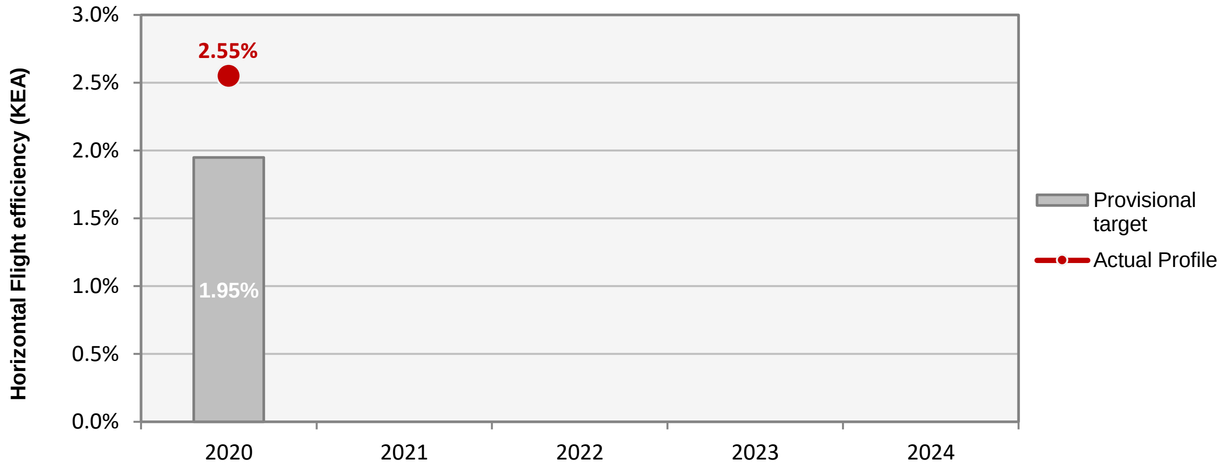
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Bulatsa	97	C	D	C	C	D

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

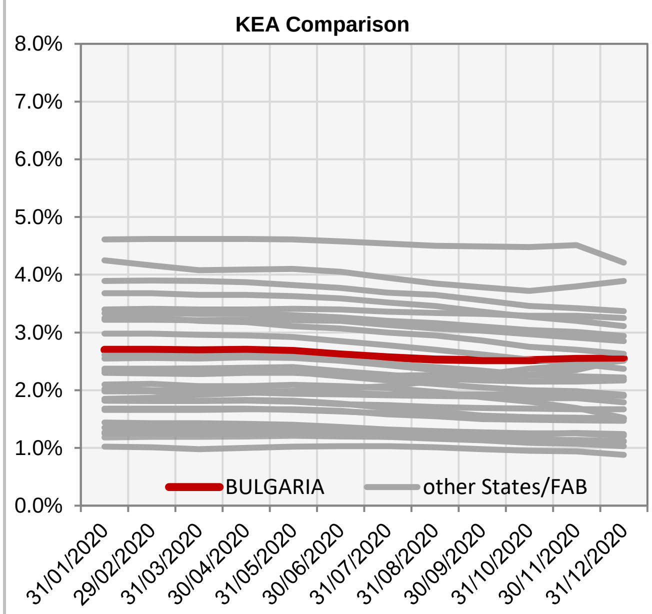
Observations

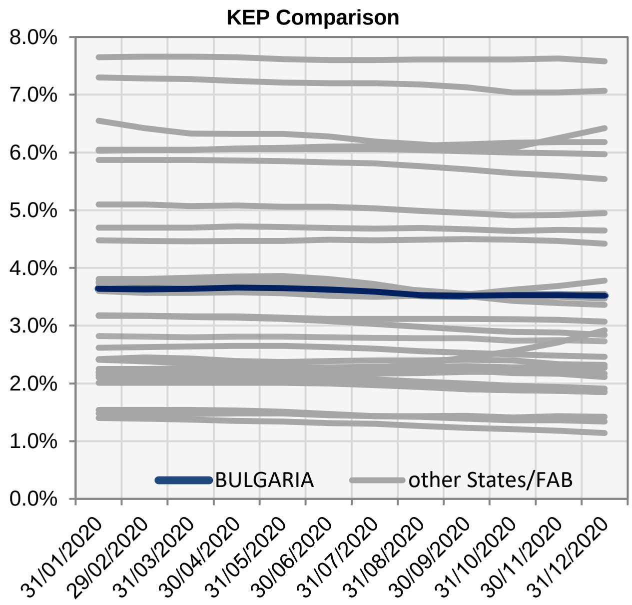
Four out of five EoSM components of the ANSP meet, or exceed, already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level. All in all, one question out of 28 is below the target level.

KEA					
	2020	2021	2022	2023	2024
Provisional target	1.95%				
Actual performance	2.55%				



End of month indicators evolution in 2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.70%	2.70%	2.69%	2.70%	2.68%	2.62%	2.57%	2.53%	2.52%	2.52%	2.54%	2.55%
KEP	3.64%	3.63%	3.64%	3.66%	3.65%	3.63%	3.59%	3.53%	3.52%	3.53%	3.53%	3.52%
KES	3.04%	3.03%	3.03%	3.05%	3.04%	2.98%	2.90%	2.81%	2.73%	2.71%	2.72%	2.72%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Update on Military dimension of the plan

An impact analysis with suggestions for improvements has been provided to National Airspace Policy Body (NAPB).

Military - related measures implemented or planned to improve capacity

TRA airspace reorganisation in the vicinity of Plovdiv and Gorna Oryahovitsa airports as a result of decisions taken by NAPB. On the basis of recommendations within the impact analysis some improvements have been carried out.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Bulgaria	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Sofia	N/A				

Initiatives implemented or planned to improve PI#6

Nil

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Bulgaria	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Sofia	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Bulgaria	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Sofia	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.17					
Actual performance	0.00					

NSA's assessment of capacity performance

There is a sharp decrease of traffic level compared to 2019, however, it should duly be noted that a need for allotment of operational staff in 4-working flows is extremely demanding. The working flows have been put in place to restrict the spread of COVID 19 infection and to ensure the 24/7 service continuity. Besides, the allocation of 4-working flows came up unsatisfactory response to the match between demand and capacity in terms of available ATCOs, and therefore the number of working flows has been reduced to 3.
As a main priority to preserve the health of people Bulatsa was forced to switch to inflexible rostering, the freedom of ATCO's movement in different shifts configurations has been restrained.

Monitoring process for capacity performance

[The NSA reported monitoring actions associated with the COVID 19 pandemic rather than monitoring actions regarding capacity performance.]

Capacity Planning

Capacity planning is on weekly basis with regard to the traffic forecast delivered by NM. The forecast is of inaccurate nature leading to over- or underestimating the number of ATCOs needed for each particular day. Relaxation in [volume of] traffic [enabled] suspension of some RAD restrictions with no significant effect on capacity.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	159.0	175.0					Factors influencing no of ATCOs include: partial reallocation of ATCOs to other duties (projects) and difficulty of predicting future needs.
Actual	155.7	146.9					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

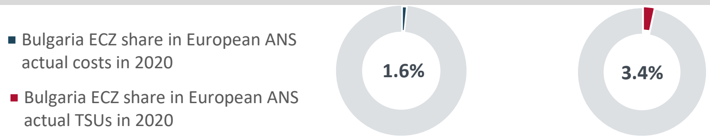
The Sofia FIR experienced a traffic reduction of 57% from 2019 levels, to 376k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.17					
Deadband +/-						
Actual	0.00					

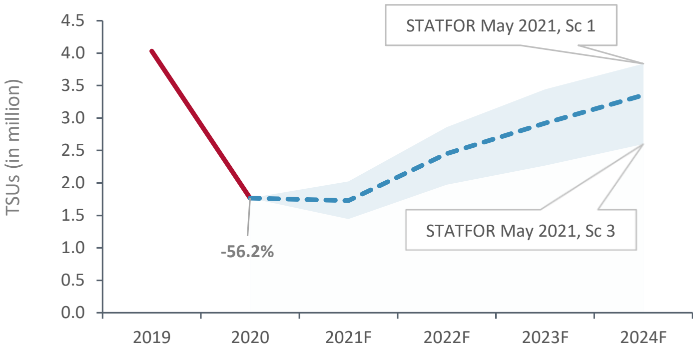
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

Contextual economic information: en-route air navigation services

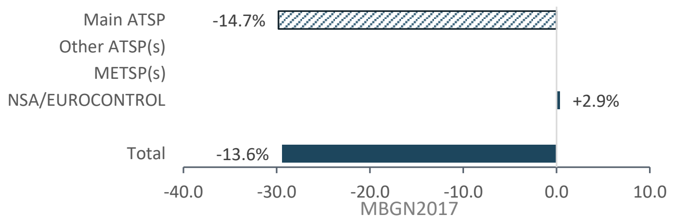
FAB:	DANUBE FAB
Main ATSP:	BULATSA
National currency:	BGN
Exchange rate:	1 EUR = 1.95543 BGN



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal BGN)	195 910 607	223 847 797	194 468 706	-0.7%	-13.1%
Inflation %	2.3%	2.5%	1.2%	-1.1 p.p.	-1.3 p.p.
Real en-route costs (BGN2017)	186 351 592	215 700 647	186 261 520	-0.05%	-13.6%
Total en-route Service Units (TSUs)	1 760 000	4 031 643	1 766 031	+0.3%	-56.2%
Real en-route unit cost per Service Unit (BGN2017)	**105.88**	**53.50**	**105.47**	**-0.4%**	**+97.1%**
Real en-route unit cost per Service Unit (EUR2017)	**54.15**	**27.36**	**53.94**	**-0.4%**	**+97.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were mostly unchanged (-0.4%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of mostly stable (+0.3%) actual TSUs and mostly unchanged (-0.05%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-56.2%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Bulgaria ECZ rose substantially (+97.1% in real terms) mainly due to the exceptional -56.2% traffic reduction. In the meantime, en-route costs significantly reduced (-13.6%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: BULATSA - the main ATSP (-14.7%) and the NSA/EUROCONTROL (+2.9%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of BULATSA en-route ANS costs (real BGN2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	111 630 762	136 521 740	110 767 553	-0.8%	-18.9%
Other operating costs	15 082 222	21 215 936	16 931 411	+12.3%	-20.2%
Depreciation	22 124 193	21 106 787	20 665 591	-6.6%	-2.1%
Cost of capital	22 052 147	23 710 175	24 376 270	+10.5%	+2.8%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total BULATSA en-route costs	**170 889 325**	**202 554 639**	**172 740 824**	**+1.1%**	**-14.7%**

Analysis at main ATSP level

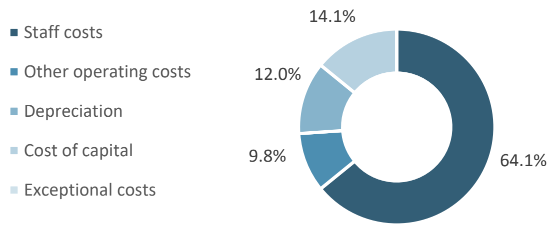
In 2020, BULATSA actual en-route costs were slightly higher (+1.1%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, BULATSA actual 2020 en-route costs are significantly lower (-14.7%, or -29.8 MBGN2017) compared to those reported in 2019. This results from the combination of:

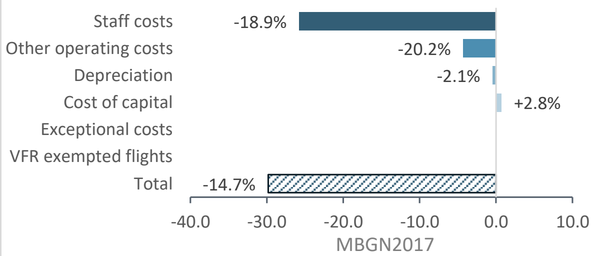
- significantly lower staff costs (-18.9%, or -25.8 MBGN2017);
- significantly lower other operating costs (-20.2%, or -4.3 MBGN2017);
- lower depreciation costs (-2.1%, or -0.4 MBGN2017);
- higher cost of capital (+2.8%, or +0.7 MBGN2017).

BULATSA implemented cost-containment measures that affected salaries and other staff benefits, as well as costs of materials, external services and mission costs.

BULATSA actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



Bulgaria terminal charging zone(s) are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted and no analysis is performed for monitoring purposes.

Notes on data and information submitted by Bulgaria

Annual Monitoring Report 2020
Local level view
Croatia

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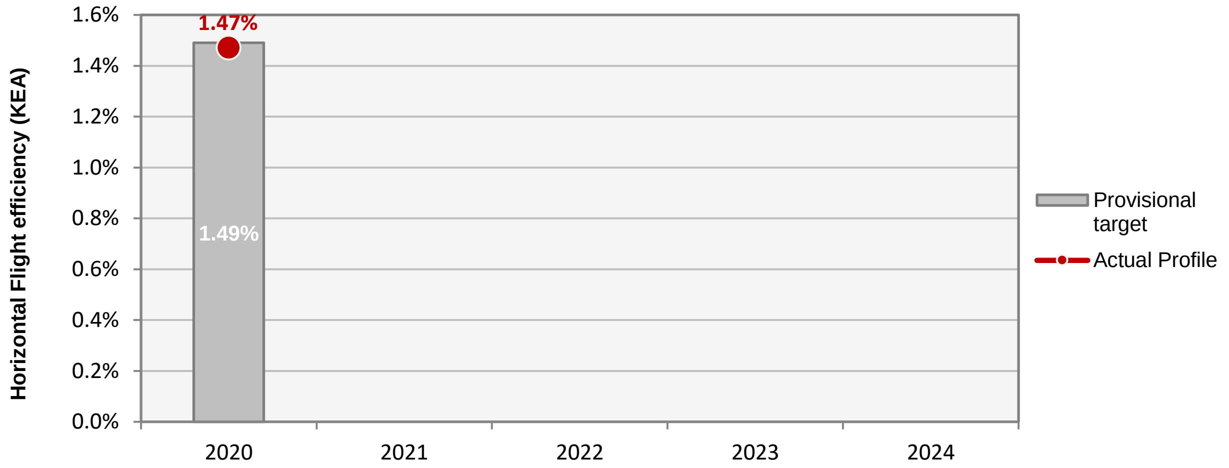
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Croatia Control	74	C	B	C	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

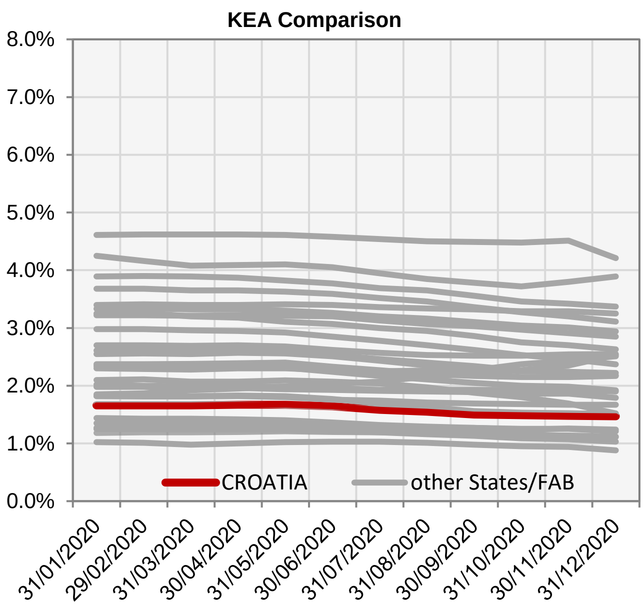
Observations

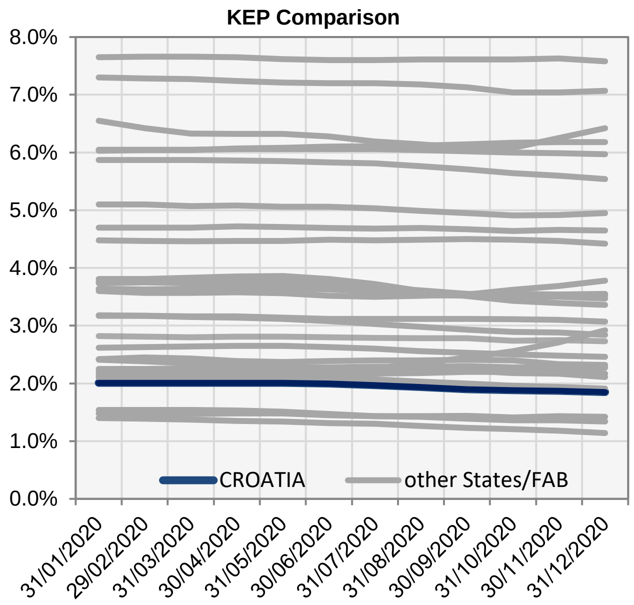
Three out of five EoSM components of the ANSP meet the 2024 target level. Two components, namely "Safety Policy and Objectives" and "Safety Risk Management", are below 2024 target levels and are expected to improve in the next years of RP3.

KEA	2020	2021	2022	2023	2024
Provisional target	1.49%				
Actual performance	1.47%				



End of month indicators evolution in 2020	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.66%	1.66%	1.66%	1.67%	1.67%	1.64%	1.58%	1.55%	1.50%	1.49%	1.48%	1.47%
KEP	2.01%	2.01%	2.01%	2.01%	2.01%	2.00%	1.97%	1.94%	1.90%	1.88%	1.87%	1.85%
KES	1.78%	1.78%	1.77%	1.77%	1.76%	1.74%	1.70%	1.65%	1.60%	1.56%	1.54%	1.52%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Update on Military dimension of the plan

The impact of military dimension on the environment KPA may have been very low due to significant decrease of military activities and air traffic affected by COVID-19 crisis.

Military - related measures implemented or planned to improve capacity

FUA restrictions and CDRs have been implemented which are managed by AMC on ASM Level 2 and notified to NM but were sparsely used or required due to significant decrease of military activities and air traffic affected by COVID-19 crisis.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Croatia	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Zagreb	N/A				

Initiatives implemented or planned to improve PI#6

The Network Manager shall provide on a monthly basis the data required for the monitoring of this indicator for monitoring referred to COMMISSION IMPLEMENTING REGULATION (EU) 2019/317 point 6 of Annex VI.
The data are not yet available on the NM/PRU dashboards for local level and can not be monitored at local level.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Croatia	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Zagreb	N/A				

Initiatives implemented or planned to improve PI#7

The Network Manager shall provide on a monthly basis the data required for the monitoring of this indicator for monitoring referred to COMMISSION IMPLEMENTING REGULATION (EU) 2019/317 point 6 of Annex VI.
The data are not yet available on the NM/PRU dashboards for local level and can not be monitored at local level.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Croatia	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Zagreb	N/A				

Initiatives implemented or planned to improve PI#8

The Network Manager shall provide on a monthly basis the data required for the monitoring of this indicator for monitoring referred to COMMISSION IMPLEMENTING REGULATION (EU) 2019/317 point 6 of Annex VI.
The data are not yet available on the NM/PRU dashboards for local level and can not be monitored at local level.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.43					
Actual performance	0.00					

NSA's assessment of capacity performance

The results are in line with traffic indicators and expectations. In the pandemic year 2020 there were no challenges for LDZO [Zagreb] ACC capacities.

Monitoring process for capacity performance

Monitoring of all available KPI's and PI's is done through the PRU portal which is considered as the main source of information.

Capacity Planning

Capacity planning is done in line with NM's initiative for development of a rolling NOP document in which short-term capacity and demand on the Network level is described. The expected traffic outlook is given for six weeks ahead and revised weekly, while capacity is adapted to traffic demand and reported to NM which assesses the efficiency for planned period. In the planning process on local level, several departments are involved in strategic and tactical development of the plan.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	111	120					Factors influencing no of ATCOs include: partial reallocation of ATCOs to other duties (projects); cost containment measures; and the accelerated retirement of ATCOs, during COVID pandemic.
Actual	107	92					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

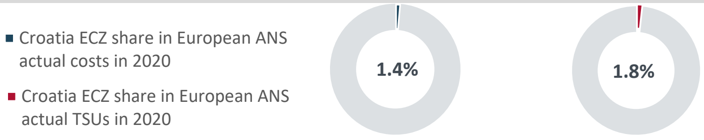
The Zagreb FIR experienced a traffic reduction of 58% from 2019 levels, to 301k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.43					
Deadband +/-						
Actual	0.00					

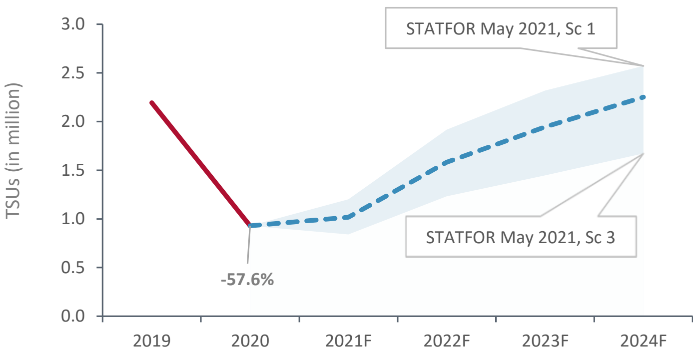
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

Contextual economic information: en-route air navigation services

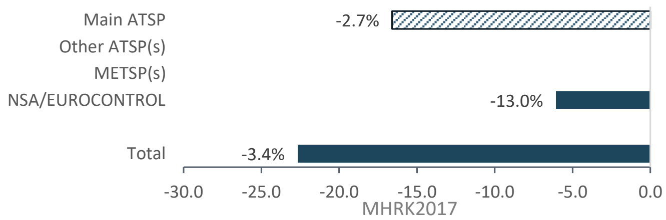
FAB:	FAB CE
Main ATSP:	Croatia Control
National currency:	HRK
Exchange rate:	1 EUR = 7.46175 HRK



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal HRK)	656 266 735	671 173 047	647 976 252	-1.3%	-3.5%
Inflation %	0.3%	0.8%	0.0%	-0.3 p.p.	-0.8 p.p.
Real en-route costs (HRK2017)	643 717 833	659 342 815	636 674 493	-1.1%	-3.4%
Total en-route Service Units (TSUs)	928 000	2 193 426	929 105	+0.1%	-57.6%
Real en-route unit cost per Service Unit (HRK2017)	**693.66**	**300.60**	**685.26**	**-1.2%**	**+128.0%**
Real en-route unit cost per Service Unit (EUR2017)	**92.96**	**40.29**	**91.84**	**-1.2%**	**+128.0%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were slightly lower (-1.2%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of mostly stable (+0.1%) actual TSUs and slightly lower (-1.1%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-57.6%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Croatia ECZ rose substantially (+128.0% in real terms) due to the exceptional -57.6% traffic reduction, while en-route costs decreased (-3.4%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: Croatia Control the main ATSP (-2.7%) and the NSA/EUROCONTROL (-13.0%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Croatia Control en-route ANS costs (real HRK2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	388 273 318	378 830 256	383 030 586	-1.4%	+1.1%
Other operating costs	77 488 204	111 481 097	85 409 962	+10.2%	-23.4%
Depreciation	100 887 410	97 691 205	100 994 260	+0.1%	+3.4%
Cost of capital	29 508 343	24 610 162	26 609 358	-9.8%	+8.1%
Exceptional costs	0	0	0		
VFR exempted flights	-27 502	0	-32 073	+16.6%	n/a
Total Croatia Control en-route costs	**596 129 772**	**612 612 720**	**596 012 093**	**-0.02%**	**-2.7%**

Analysis at main ATSP level

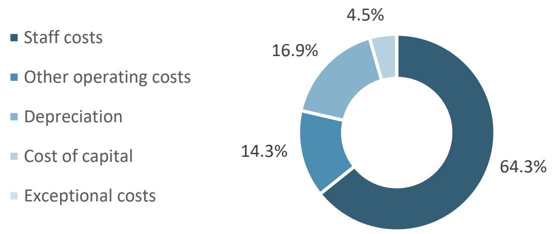
In 2020, Croatia Control actual en-route costs were mostly in line (-0.02%) with those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Croatia Control actual 2020 en-route costs are lower (-2.7%, or -16.6 MHRK2017) compared to those reported in 2019. This results from the combination of:

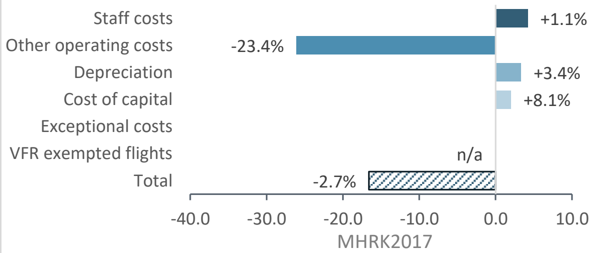
- slightly higher staff costs (+1.1%, or +4.2 MHRK2017);
- significantly lower other operating costs (-23.4%, or -26.1 MHRK2017);
- higher depreciation costs (+3.4%, or +3.3 MHRK2017);
- higher cost of capital (+8.1%, or +2.0 MHRK2017);
- deduction of costs for VFR exempted flights (0.03 MHRK2017) in 2020.

According to the information provided by Croatia, Croatia Control implemented exceptional staff cost-saving measures through salary cuts, postponement of ATCO trainee recruitment and training, postponement of replacements of retirees and recruitment of support staff. However, actual staff costs in 2020 were +1.1% higher than in 2019 reflecting much higher severance costs resulting from accelerated retirement dynamics in 2020. In addition, the cost-saving measures included freezing of mission expenses, reduction in maintenance costs and utilities and OPEX relating to frozen CAPEX projects. Finally, higher depreciation costs reflect the deployment of the RP2 investment plan resulting in increased depreciation charges in 2020.

Croatia Control actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



Croatia terminal charging zone(s) are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted and no analysis is performed for monitoring purposes.

Notes on data and information submitted by Croatia

Annual Monitoring Report 2020

Local level view

Cyprus

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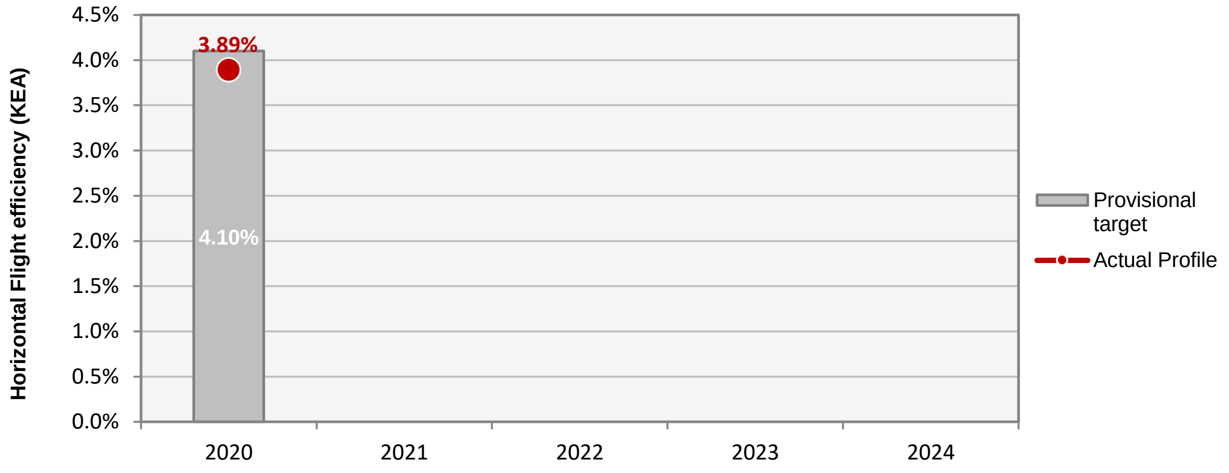
Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
CYATS	71	B	B	C	B	B

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

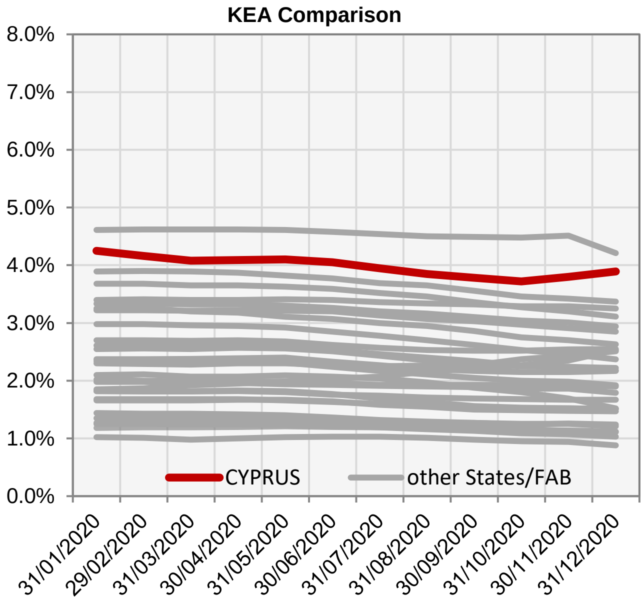
Observations

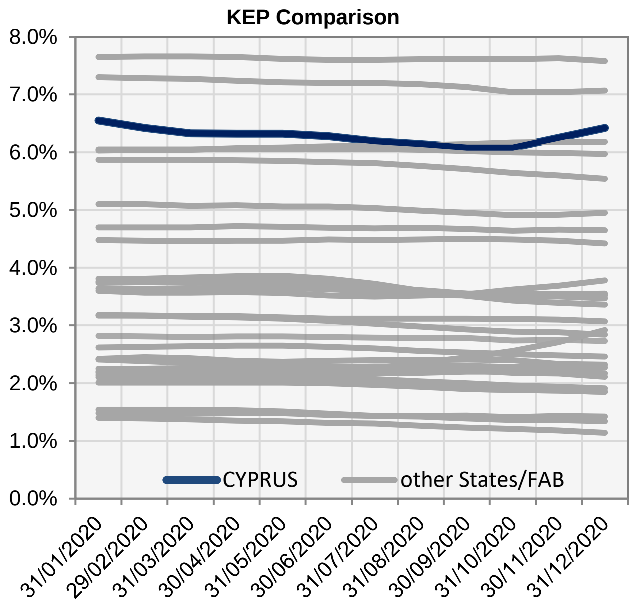
All EoSM components are below 2024 EoSM target levels. Improvements in safety management are still expected in all components during RP3 to achieve 2024 targets.

KEA					
	2020	2021	2022	2023	2024
Provisional target	4.10%				
Actual performance	3.89%				



End of month indicators evolution in 2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	4.25%	4.16%	4.08%	4.09%	4.10%	4.05%	3.95%	3.85%	3.78%	3.72%	3.80%	3.89%
KEP	6.55%	6.42%	6.33%	6.32%	6.32%	6.28%	6.19%	6.14%	6.08%	6.08%	6.25%	6.42%
KES	5.90%	5.81%	5.76%	5.78%	5.78%	5.74%	5.66%	5.59%	5.51%	5.45%	5.55%	5.66%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Update on Military dimension of the plan

The activities of the National Military Authorities are predominately executed over the National airspace. The cooperation between the national Civil and Military Authorities is excellent and the effect on civil aviation is minimal.

Over the high seas however, which constitute the majority of the Nicosia FIR, a number of foreign Military authorities, most commonly the USA Navy, Israeli Air Force, British Air Force and Turkish military forces, regularly performed operational flights and exercises throughout 2020.

The activities of the British forces were coordinated with the national authorities (AMC) and there was minimal effect on ATS. Likewise, the cooperation with the Israeli authorities is also very good and the impact on ATS is minimised.

By far the biggest problem remains with the Turkish forces which do not cooperate at all with the legal authorities of the State. The Turkish air force carried out exercises and operational flights within Nicosia FIR, at times even penetrating Cyprus National airspace, in violation to ICAO procedures thus increasing the workload on ATC staff and hence having a detrimental effect on airspace capacity.

The political unrest in the South East Mediterranean region gave rise to the number of USA and Russian operational flights (OAT). These flights were rarely coordinated with the ATS authorities thus causing additional workload to ACC staff. Nevertheless, the situation in 2020 was better than previous years, as a consequence of the COVID-19 pandemic, better coordination with British and Israeli military authorities and fewer operations of aircraft carriers south of Cyprus.

Military - related measures implemented or planned to improve capacity

There will be continuous efforts to improve further the coordination with third country military authorities using the Nicosia FIR.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Cyprus	100%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Nicosia	100%				

Initiatives implemented or planned to improve PI#6

The NSA regularly emphasises, to the entity responsible for the tactical management of the airspace (AMC), the need to monitor the planned Vs the actual times of airspace reservations so as to promote the most effective use of reserved or segregated airspace. In the context of its oversight inspections it has raised a number of findings in order to drive positive change and to achieve this goal. As a result, improvements have been made. For example, real time activation / de-activation of reserved areas is now implemented through the establishment of real time communications between the ATC Units and Military authorities.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Cyprus	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Nicosia	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Cyprus	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Nicosia	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	1.00					
Actual performance	0.20					

NSA's assessment of capacity performance

A historical drop of air traffic demand has been recorded due to the COVID-19 virus outbreak and the severe air travel restrictions imposed by the State in an effort to contain the pandemic (mid-March 2020). As a result, the average en-route delay per flight for the most part of 2020 was zero (0.0min).

Monitoring process for capacity performance

The NSA has in place the "NSA procedure for the monitoring of ANS Performance". According to this procedure, the NSA monitors at quarterly intervals the average minutes of enroute ATFM (Air Traffic Flow Management) delay per flight. Based on this, the NSA analyses the trends and takes the necessary measures, if needed.

Capacity Planning

Capacity planning is consistent with the required performance.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	72	86					15 new ATCOs were recruited in 2020. In view of the training cycles and the staff transfer mechanism agreed with the Unions, 5 ATC Tower ATCOs were transferred to the Nicosia ACC in 2020.
Actual	77.0	80.5					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

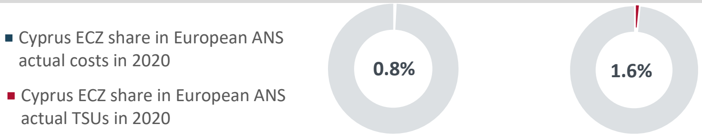
The Nicosia FIR experienced a traffic reduction of 60% from 2019 levels, to 164k flights. The traffic level was accommodated with 33k minutes of en route ATFM delays to airspace users, almost 90% of which occurred in January and February when traffic demand was actually higher than the previous year.

En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	1.00					
Deadband +/-						
Actual	0.20					

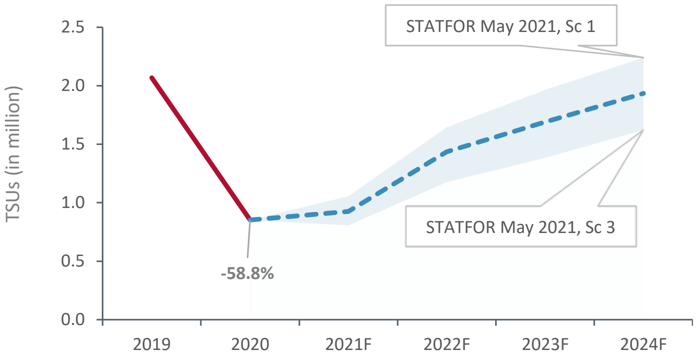
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

Contextual economic information: en-route air navigation services

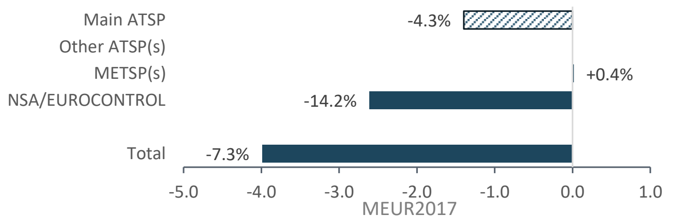
FAB:	BLUE MED FAB
Main ATSP:	DCAC Cyprus
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	54 206 423	54 756 886	50 780 524	-6.3%	-7.3%
Inflation %	0.0%	0.5%	0.0%	0.0 p.p.	-0.5 p.p.
Real en-route costs (EUR2017)	53 734 349	54 359 575	50 368 918	-6.3%	-7.3%
Total en-route Service Units (TSUs)	910 000	2 068 170	852 579	-6.3%	-58.8%
Real en-route unit cost per Service Unit (EUR2017)	**59.05**	**26.28**	**59.08**	**+0.1%**	**+124.8%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were mostly unchanged (+0.1%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of lower (-6.3%) actual TSUs and lower (-6.3%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-58.8%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Cyprus ECZ rose substantially (+124.8% in real terms) mainly due to the exceptional -58.8% traffic reduction. In the meantime, en-route costs decreased (-7.3%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: DCAC Cyprus - the main ATSP (-4.3%), the MET service provider (+0.4%) and the NSA/EUROCONTROL (-14.2%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of DCAC Cyprus en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	16 929 243	15 956 571	15 607 817	-7.8%	-2.2%
Other operating costs	15 698 470	11 267 731	12 592 051	-19.8%	+11.8%
Depreciation	1 886 470	2 649 960	1 897 920	+0.6%	-28.4%
Cost of capital	999 670	2 636 523	1 015 362	+1.6%	-61.5%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total DCAC Cyprus en-route costs	**35 513 853**	**32 510 786**	**31 113 149**	**-12.4%**	**-4.3%**

Analysis at main ATSP level

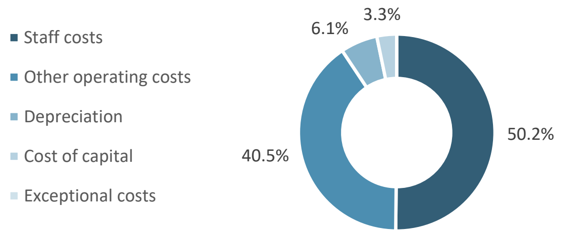
In 2020, DCAC Cyprus actual en-route costs were significantly lower (-12.4%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, DCAC Cyprus actual 2020 en-route costs are lower (-4.3%, or -1.4 MEUR2017) compared to those reported in 2019. This results from the combination of:

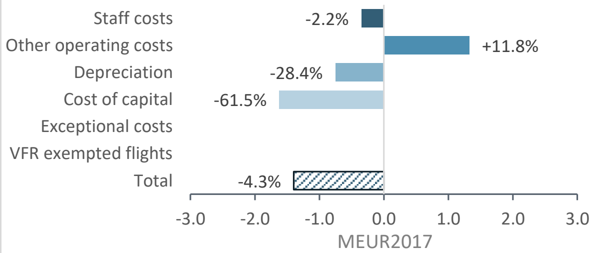
- lower staff costs (-2.2%, or -0.3 MEUR2017);
- significantly higher other operating costs (+11.8%, or +1.3 MEUR2017);
- significantly lower depreciation costs (-28.4%, or -0.8 MEUR2017);
- significantly lower cost of capital (-61.5%, or -1.6 MEUR2017).

DCAC Cyprus implemented measures that affected overtime costs of ATC staff, postponement of trainings and missions abroad and significant reduction in the return on equity rate. Additionally, depreciation costs were lower due to the fact that a number of projects were fully depreciated in 2019 resulting in a lower depreciation in 2020.

DCAC Cyprus actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



Cyprus terminal charging zone(s) are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted and no analysis is performed for monitoring purposes.

Notes on data and information submitted by Cyprus

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Annual Monitoring Report 2020
Local level view
Czech Republic

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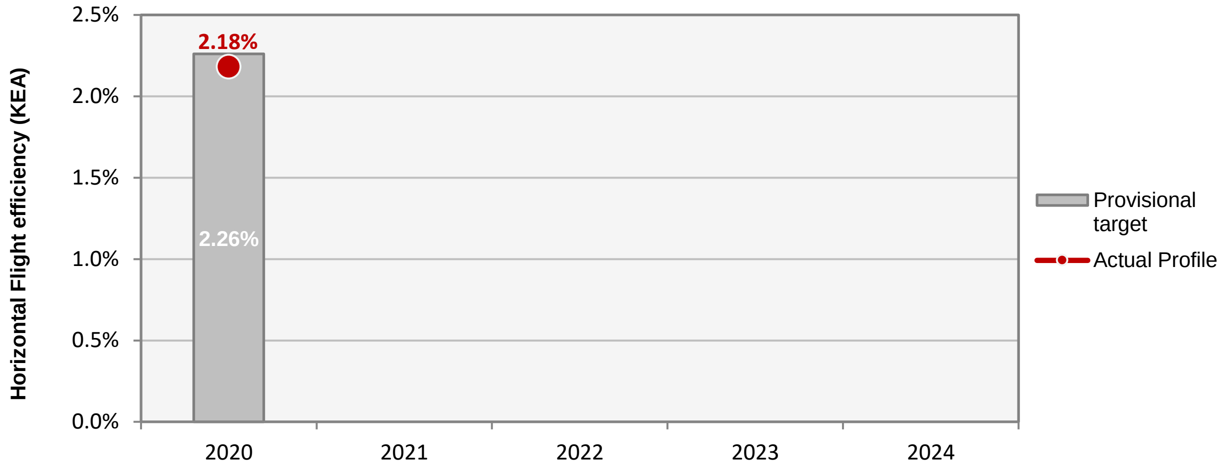
Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
ANS CR	99	D	C	D	D	D

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

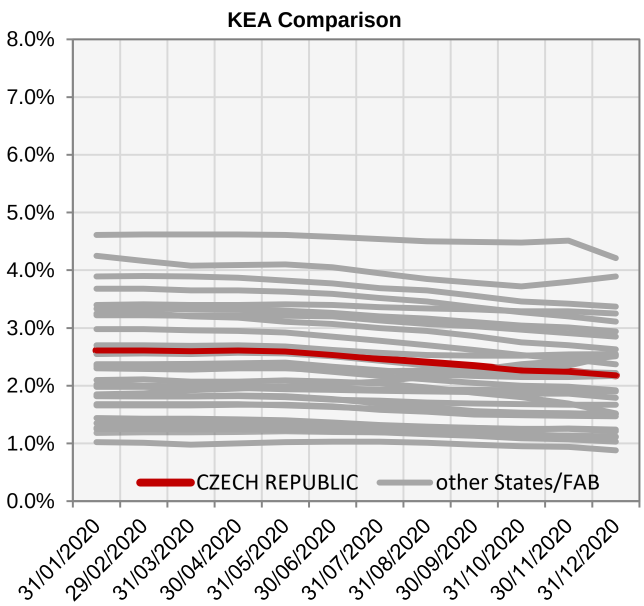
Four out of five EoSM components of the ANSP meet, or exceed, already the 2024 target level. Only the component "Safety Policy and Objectives" is below 2024 target level. All in all, one question out of 28 is below the target level.

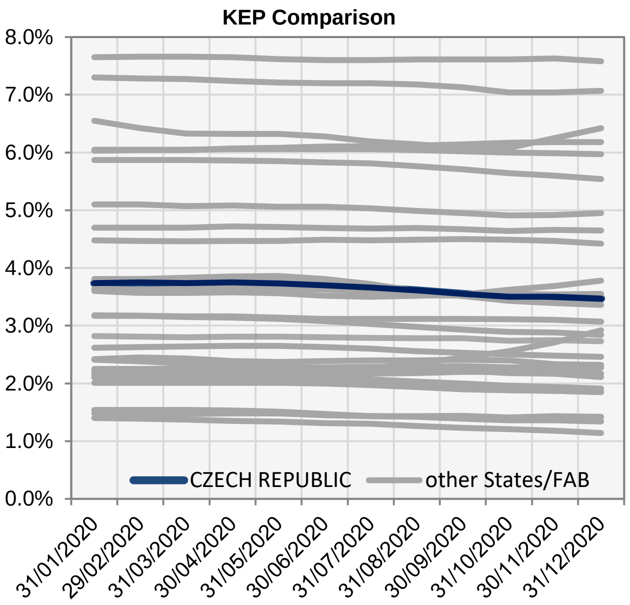
KEA	2020	2021	2022	2023	2024
Provisional target	2.26%				
Actual performance	2.18%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.61%	2.61%	2.60%	2.61%	2.59%	2.53%	2.46%	2.40%	2.34%	2.26%	2.24%	2.18%
KEP	3.74%	3.75%	3.74%	3.75%	3.73%	3.70%	3.66%	3.61%	3.55%	3.50%	3.50%	3.47%
KES	3.54%	3.54%	3.54%	3.55%	3.52%	3.49%	3.43%	3.37%	3.32%	3.28%	3.27%	3.24%



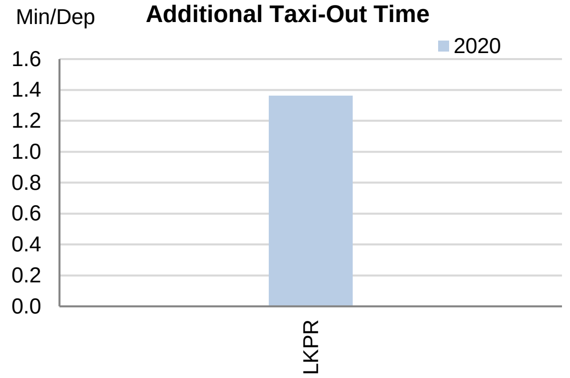


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

There are four airports in Czech Republic subject to RP3 monitoring. According to the traffic figures at these 4 airports, only Prague (LKPR) must be monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.
Traffic at the ensemble of these airports decreased by 63% in 2020.
Observed additional times at Prague, where traffic decreased by 67% in 2020, were more than 50% lower, driven by the performance from April until the end of the year.

2. Additional Taxi-Out Time

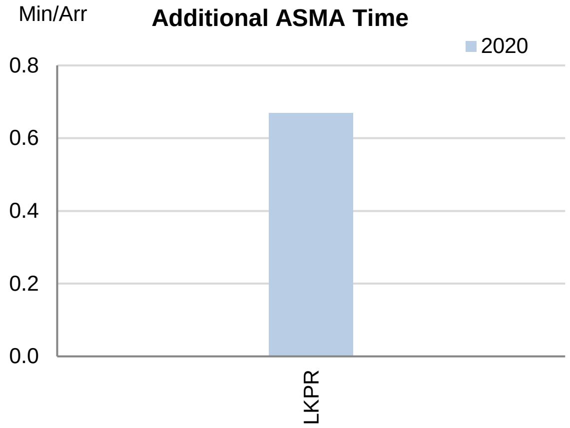


The performance regarding additional taxi-out times at Prague (LKPR) had been worsening in the past years, driven by the performance in the winter months (probably associated to de-icing procedures).

In 2020 the performance in January and February was already better than in 2019, and then this was followed by an extremely low average additional taxi-out time of 0.26 min/dep. between April and October.
At the end of the year though, these times increased and nearly reached 2 min/dep in December, maybe again related to de-icing procedures.

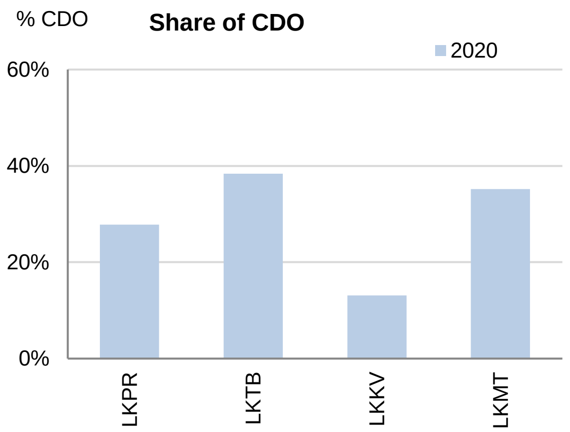
According to the Czech Republic's monitoring report: *The additional taxi-out time is influenced by the design of the taxiways at Prague. The STOP bars for crossing RWY 12/30 implemented in the past on LKPR have proven to be a very effective measure* .

3. Additional ASMA Time



Like the additional taxi-out times, the additional times in the terminal airspace drastically decreased in 2020 (LKPR; 2019: 1.47 min/arr.; 2020: 0.67 min/arr.) and from April onwards, these times remained well below the 0.40 min/arr.
According to the Czech Republic's monitoring report: *If traffic permits the aircrafts are allowed for direct routing* .

4. Share of arrivals applying CDO



Despite having no officially published CDO procedures, Brno-Tuřany (LKTB) and Ostrava (LKMT) have higher shares of CDO flights than the overall RP3 value in 2020 (32.5%) (LKTB: 38.4%; LKMT: 35.2%).
Prague (LKPR) has 27.8% and Karlovy Vary 13.1% of CDO flights.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Prague-LKPR	1.36					0.67					28%				
Brno-Tuřany-LKTB	-					-					38%				
Karlovy Vary-LKKV	-					-					13%				
Ostrava-LKMT	-					-					35%				

Update on Military dimension of the plan

There is a significant impact of MIL activities on the ENV indicators. The military has the lead role in the AMC, the ANSPs has no power to evaluate the airspace reservation by the military. In any case, the implementation of FUA is regularly evaluated through monitoring organized by the CAA. The administrators of the individual TRA / TSA (mostly represented by MAA) submit the evaluation of the plans and the activation of these airspaces on a monthly basis to CAA, and any deficiencies are addressed within the ASMCG meetings or individually with specific administrators, if needed.
Airspace Charter of the Czech Republic describes the competent authorities (CIV and MIL), their responsibilities and principles by which a joint civilian-military body (ASM Committee - ASMC) carries out strategic planning for the use of the Czech Republic airspace. The Charter incorporates as annexes the descriptions of processes used to provide high quality services to airspace users and ATS providers through safe, accurate and timely planning, approval and promulgation of national airspace management measures and international cooperation. The Airspace Charter was updated in 2020.
The airspace of the Czech Republic is open to flights and it is divided in accordance with the rules contained in Sections 44 - 44c) of Act No. 49/1997. Pursuant to Section 44(2) of the Act, the CAA issues, in agreement with the Ministry of Defence and after consulting the Person in charge of the exercise of governmental authority in the matters of sports aircrafts and parachutes, measures of general nature under the Administrative Procedure Code on division of the airspace of the Czech Republic to ensure safe conduct of flights and efficient provision of air services. In fulfilment of that mandate, the CAA takes into account, where possible, the FUA specifications described in “EUROCONTROL Specifications for the Application of the Flexible Use of Airspace (FUA)”. Consultation with airspace users, service providers and other relevant bodies is conducted with the aim of obtaining consensus, wherever possible, before making changes in the planning or design of airspace management. The consultations are performed in a transparent way following a predefined procedure. The ASMC ensures effective cooperation at all levels through the ASM Consultation Group (ASMCG). In application of Regulation (EC) No 2150/2005, the ASMC cooperates very closely with NSA and takes into account the findings and relevant corrective measures resulting from control activities (e.g. CAA, MAA, EASA). In accordance with ICAO requirements, the CAA publishes the airspace management policy and implementation of new airspace structures and follow-up procedures or their changes so that all airspace users and ATS providers have sufficient time to comply with the new requirements. Within its competencies, the ASMC supports the implementation of performance schemes. The conclusions adopted by the ASMC contributes to meeting the relevant performance targets and complying with EU-wide performance targets.
Dynamic Airspace Management is realized at ASM Level 2 and/or ASM Level 3. Areas published in AIP CR / MIL AIP or other pre-arranged areas can be used under FUA rules as AUP manageable with UUP function updates.
The ATM systems of the Airforces are directly connected to the ANS CR systems in order to present current status of reserved areas to the ATCOs. The AIM/AIS provider promulgates the planning status of the airspaces concerned in AISVIEW web tool, which serves for airspace users as an information source.
On the local level the FUA is addressed within the AMC activities, on the FAB CE level the DAM/STAM projects are in progress. The AMC is newly certificated under the EU 2017/373. The regulation 2150/2005 is fully implemented within the Czech Republic.

Military - related measures implemented or planned to improve capacity

Environment: The national tool (like LARA) was improved in a way allowing for direct communication with the NM systems (solution developed under the SESAR project).
All stakeholders (NSA, military and ANSP) are in regular discussion on possible mitigation of negative effects of military activities on the civil aviation (i.e. FUA) though the consultation Group ASM (ASMCG).
The Airspace Charter of the Czech Republic was updated in 2020.

Capacity: The traffic complexity manager (a tool developed with the SESAR support) was put into full operational use in 2020. The tool is predicting traffic load in particular sectors (including military activities) and thus allowing for better ATCOs usage and improvement in capacity area.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Czech Republic	40%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Prague	40%				

Initiatives implemented or planned to improve PI#6

Dynamic Airspace Management is realized at ASM Level 2 and/or ASM Level 3. Areas published in AIP CR / MIL AIP or other pre-arranged areas can be used under FUA rules as AUP manageable with UUP function updates. FUA evaluation is performed monthly by individual TRA / TSA administrators and reported to the CAA. Deficiencies are addressed both within the ASMCG meetings and individually with individual administrators, if needed.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Czech Republic	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Prague	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Czech Republic	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Prague	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.20					
Actual performance	0.00					

NSA's assessment of capacity performance

There was no delay recorded in the Czech Republic due to significantly lower traffic caused by the COVID crisis.

Monitoring process for capacity performance

The monitoring process is based on quarterly monitoring reports prepared by ANS CR. These are based on the company Annual plan and cover all KPA.

Capacity Planning

All measures are aiming to increase capacity so that the traffic level of 2019 can be managed without additional costs (excessive overtimes and high ATFM delays). The next years of the RP3 aiming on capacity increase in accordance with the requirements of NM. ATCOs training was realized in the maximum possible range (with regard to traffic levels) and in accordance with to 'ATS optimisation' project. The main projects Neopteryx and 'ATS optimisation' project are being deployed while main benefits are expected in RP4).
Within capacity planning, the key project 'ATS optimisation' project (centralization of APP and better use of operational staff as described in the PP2019).
The reported increase in ATCOs is a consequence of the above transfer of ATCOs from APP and ACC.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	107	126					ANS CR had 13 employees holding licence but being assigned to other duties, with 4,3 FTE dedicated to ATS provisioning.
Actual	115.9	135.8					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The Prague FIR experienced a traffic reduction of 61% from 2019 levels, to 340k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

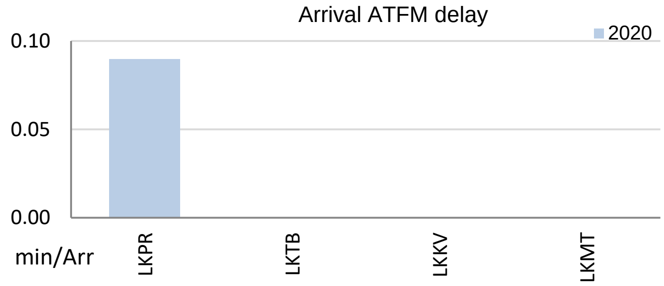
En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.20					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

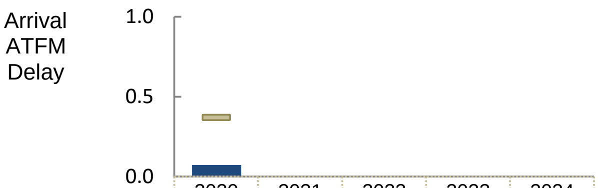
There are four airports in Czech Republic subject to RP3 monitoring. According to the traffic figures at these 4 airports, only Prague (LKPR) must be monitored for pre-departure delays.
The Airport Operator Data Flow is fully established at Prague and the monitoring of pre-departure delays can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at the ensemble of these airports decreased by 63% in 2020. Arrival ATFM delays were only observed in Prague and only in the month of January. Slot adherence is almost 95% for Prague. The other airports had almost no regulated departures and all of those adhered to the STW.

2. Arrival ATFM Delay



The national average arrival ATFM delay at Czech airports in 2020 was 0.07 min/arr, even lower than the 0.16 min/arr in 2019 (-55%).
Only Prague (LKPR: 2019: 0.18 min/arr.; 2020: 0.09 min/arr.) registered delays in 2020, all in January, and 100% of these regulations were attributed to weather.

3. Arrival ATFM Delay – National Target and Incentive Scheme

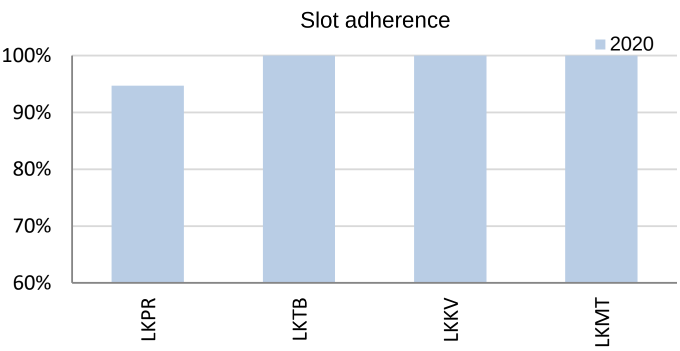


	2020	2021	2022	2023	2024
Actual	0.07				
Target	0.37				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Czech airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
Only 81 departures in total from Brno-Tuřany (LKTB), Karlovy Vary (LKKV) and Ostrava (LKMT)
were regulated in the entire year, with a 100% compliance.
The national average, driven by Prague, was 94.9%.With regard to the 4.2% of flights that did not adhere, 3.9% was early and 1.2% was late.

5. ATC Pre-departure Delay

The quality of the airport data reported by Prague (the only Czech airport subject to monitoring of this indicator) is too low, preventing the calculation of this indicator.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Prague.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)
To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Prague was well above 40% since April 2020, preventing the calculation of this indicator, due to the special traffic composition. Prague had proper reporting before the pandemic.

6. All Causes Pre-departure Delay

Prague is the only Czech airport subject to the monitoring of this indicator.
The total (all causes) delay in the actual off block time at Prague in 2020 was 8.30 min/dep. The higher delays per flight were observed in the first trimester of the year and then back in November and December.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

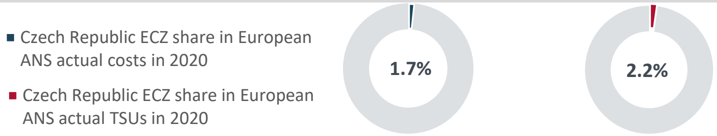
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

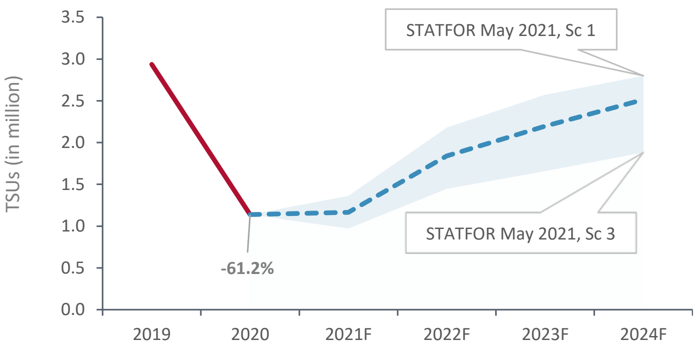
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Prague-LKPR	0.09					94.7%					n/a					8.30				
Brno-Tuřany-LKTB	0					100.0%					-					-				
Karlovy Vary-LKKV	0					100.0%					-					-				
Ostrava-LKMT	0					100.0%					-					-				

Contextual economic information: en-route air navigation services

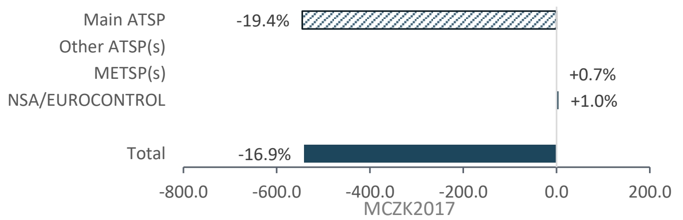
FAB:	FAB CE
Main ATSP:	ANS CR
National currency:	CZK
Exchange rate:	1 EUR = 26.3115 CZK



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal CZK)	3 038 690 738	3 305 843 079	2 800 303 754	-7.8%	-15.3%
Inflation %	3.3%	2.6%	3.3%	0.0 p.p.	0.7 p.p.
Real en-route costs (CZK2017)	2 886 058 313	3 204 517 254	2 663 026 674	-7.7%	-16.9%
Total en-route Service Units (TSUs)	1 129 000	2 936 186	1 138 417	+0.8%	-61.2%
Real en-route unit cost per Service Unit (CZK2017)	**2 556.30**	**1 091.39**	**2 339.24**	**-8.5%**	**+114.3%**
Real en-route unit cost per Service Unit (EUR2017)	**97.16**	**41.48**	**88.91**	**-8.5%**	**+114.3%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-8.5%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+0.8%) actual TSUs and lower (-7.7%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-61.2%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Czech Republic ECZ rose substantially (+114.3% in real terms) mainly due to the exceptional -61.2% traffic reduction. In the meantime, en-route costs significantly reduced (-16.9%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: ANS CR - the main ATSP (-19.4%), the MET service provider (+0.7%) and the NSA/EUROCONTROL (+1.0%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of ANS CR en-route ANS costs (real CZK2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	1 520 213 825	1 780 638 688	1 368 672 067	-10.0%	-23.1%
Other operating costs	333 030 185	369 082 292	289 239 635	-13.1%	-21.6%
Depreciation	491 878 000	439 282 000	438 738 000	-10.8%	-0.1%
Cost of capital	152 870 000	238 622 000	178 281 300	+16.6%	-25.3%
Exceptional costs	0	0	0		
VFR exempted flights	-22 200 532	-23 333 524	-15 951 082	-28.2%	-31.6%
Total ANS CR en-route costs	**2 475 791 478**	**2 804 291 456**	**2 258 979 919**	**-8.8%**	**-19.4%**

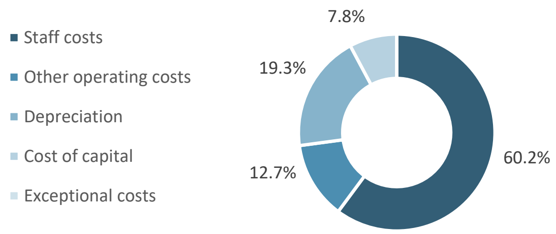
Analysis at main ATSP level

In 2020, ANS CR actual en-route costs were lower (-8.8%) compared to those reported in the initial plans submitted in December 2020.

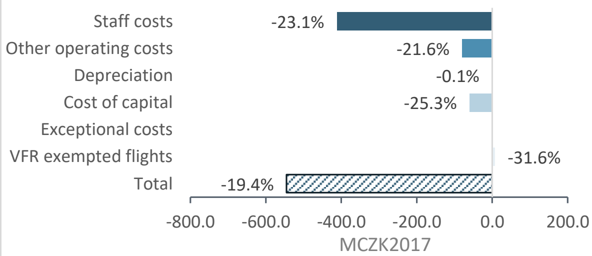
As indicated in the text box above, ANS CR actual 2020 en-route costs are significantly lower (-19.4%, or -545.3 MCZK2017) compared to those reported in 2019. This results from the combination of:
- significantly lower staff costs (-23.1%, or -412.0 MCZK2017);
- significantly lower other operating costs (-21.6%, or -79.8 MCZK2017);
- mostly stable depreciation costs (-0.1%, or -0.5 MCZK2017);
- significantly lower cost of capital (-25.3%, or -60.3 MCZK2017);
- significantly lower deduction for VFR exempted flights (-31.6%).

ANS CR implemented cost-cutting measures that significantly affected staff costs, external contracts, travelling costs, postponements and reduction of buildings and ATM maintenance. Capital related costs were also affected by postponements and cancelations of some investment projects. Cost of capital was affected by the application of a lower return on equity rate.
Furthermore, ANS CR implemented a new organizational structure limiting the managerial positions, which will positively contribute to the cost reduction (mainly staff costs) over the rest of RP3 and onwards.

ANS CR actual 2020 en-route costs by nature

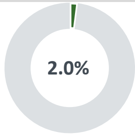


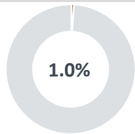
Actual costs variation by nature between 2019 and 2020



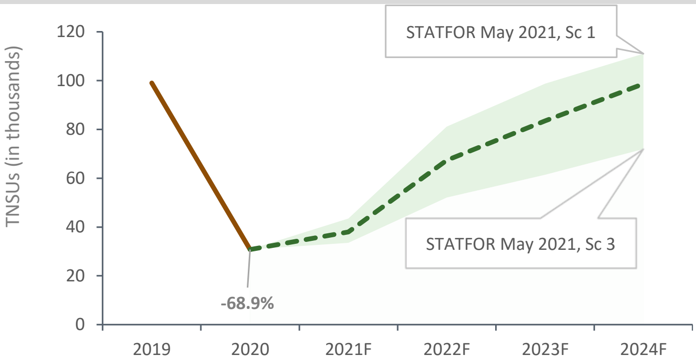
Contextual economic information: terminal air navigation services

Main ATSP:	ANS CR
National currency:	CZK
Number of airports in TCZ:	4 (see also **Note 1**)

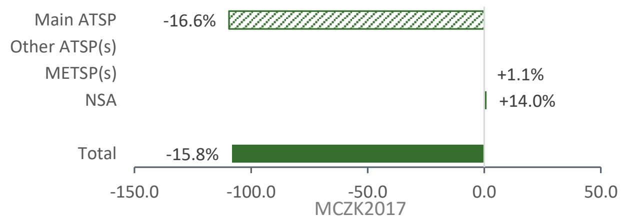




Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal CZK)	709 501 000	611 597 100	-13.8%
Inflation %	2.6%	3.3%	0.7 p.p.
Real terminal costs (CZK2017)	683 605 036	575 365 455	-15.8%
Total Terminal Navigation Service Units	99 036	30 771	-68.9%
Real terminal unit cost per Terminal Navigation Service Unit (CZK2017)	**6 902.57**	**18 698.01**	**+170.9%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**262.34**	**710.64**	**+170.9%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Czech Republic TCZ comprises 4 airports, please see also **Note 1** at the end of this report regarding planned changes to the scope of this TCZ.

Between 2019 and 2020, the terminal unit costs of Czech Republic TCZ rose substantially (+170.9% in real terms) mainly due to the exceptional -68.9% traffic reduction. In the meantime, terminal costs significantly reduced (-15.8%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-68.9%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: ANS CR - the main ATSP (-16.6%), the MET service provider (+1.1%) and the NSA (+14.0%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of ANS CR Terminal ANS costs in TCZ (real CZK2017)	2019A	2020A	2020A vs 2019A
Staff	465 572 564	365 997 976	-21.4%
Other operating costs	78 650 193	68 673 647	-12.7%
Depreciation	116 964 000	117 073 000	+0.1%
Cost of capital (see also **Note 2**)	0	0	
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total ANS CR terminal costs in TCZ	**661 186 757**	**551 744 622**	**-16.6%**

Analysis at main ATSP level

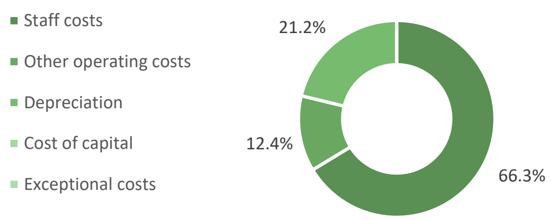
As indicated in the text box above, ANS CR actual 2020 terminal costs in TCZ are significantly lower (-16.6%, or -109.4 MCZK2017) than those reported in 2019. This results from the combination of:

- significantly lower staff costs (-21.4%, or -99.6 MCZK2017);
- significantly lower other operating costs (-12.7%, or -10.0 MCZK2017);
- mostly stable depreciation costs (+0.1%, or +0.1 MCZK2017);

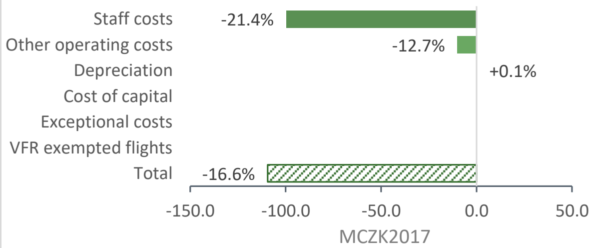
ANS CR implemented cost-cutting measures that significantly affected staff costs, external contracts, travelling costs, postponements and reduction of buildings and ATM maintenance. Capital related costs were also affected by postponements and cancelations of some investment projects.

Furthermore, ANS CR implemented a new organisational structure, limiting the managerial positions, which will positively contribute to the cost reduction (mainly staff costs) over the rest of RP3 and onwards.

ANS CR actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (CZK2017)	3 204 517 254	2 663 026 674	-16.9%
Real terminal costs (CZK2017)	683 605 036	575 365 455	-15.8%
Real gate-to-gate costs (CZK2017)	3 888 122 290	3 238 392 130	-16.7%
En-route share in gate-to-gate costs (%)	**82.4%**	**82.2%**	**-0.2 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Czech Republic significantly reduced (-16.7%, or -649.7 MCZK2017) in real terms. This is a combination of a significant reduction (-16.9%, or -541.5 MCZK2017) in en-route and a significant decrease (-15.8%, or -108.2 MCZK2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (82.2%) remained fairly constant (-0.2 p.p.) compared to the figure reported in 2019 (82.4%).

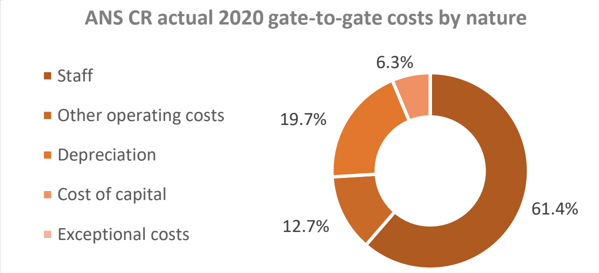
Breakdown of ANS CR gate-to-gate ANS costs (real CZK2017)	2019A	2020A	2020A vs 2019A
Staff	2 246 211 253	1 734 670 042	-22.8%
Other operating costs	447 732 485	357 913 282	-20.1%
Depreciation	556 246 000	555 811 000	-0.1%
Cost of capital (see also Note 2)	238 622 000	178 281 300	-25.3%
Exceptional costs	0	0	
VFR exempted flights	-23 333 524	-15 951 082	-31.6%
Total ANS CR gate-to-gate costs	**3 465 478 213**	**2 810 724 541**	**-18.9%**

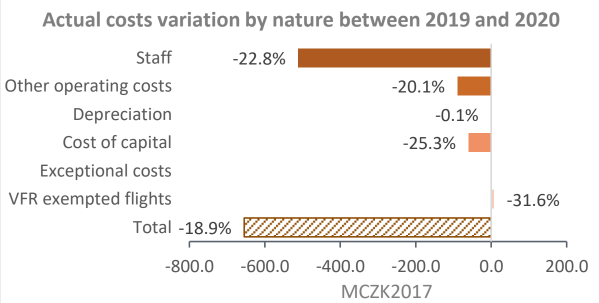
Analysis at main ATSP level

ANS CR actual 2020 gate-to-gate costs are significantly lower (-18.9%, or -654.8 MCZK2017) than those reported in 2019. This results from the combination of:

- significantly lower staff costs (-22.8%, or -511.5 MCZK2017);
- significantly lower other operating costs (-20.1%, or -89.8 MCZK2017);
- mostly stable depreciation costs (-0.1%, or -0.4 MCZK2017);
- significantly lower cost of capital (-25.3%, or -60.3 MCZK2017);
- significantly lower deduction for VFR exempted flights (-31.6%).

Details on the drivers behind the changes observed above are provided in the respective analyses of ANS CR at en-route and terminal charging zone level.





Notes on data and information submitted by Czech Republic

Note 1: Planned changes to the scope of Czech Republic TCZ

According to the information provided by the Czech Republic, it intends to retroactively modify the composition of the Czech Republic TCZ for the RP3 from four airports currently to one by excluding three regional airports (Brno–Tuřany, Karlovy Vary and Leoš Janáček Airport Ostrava). If this modification is approved, the TCZ will comprise a single airport - Václav Havel Airport Prague.

Note 2: Cost of capital of ANS CR in TCZ

The Czech Republic decided not to include the cost of capital of ANS CR in the cost base of the terminal charging zone for the whole of RP3, which is consistent with the approach and reporting over the RP2.

Annual Monitoring Report 2020
Local level view
Denmark

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Effectiveness of Safety Management

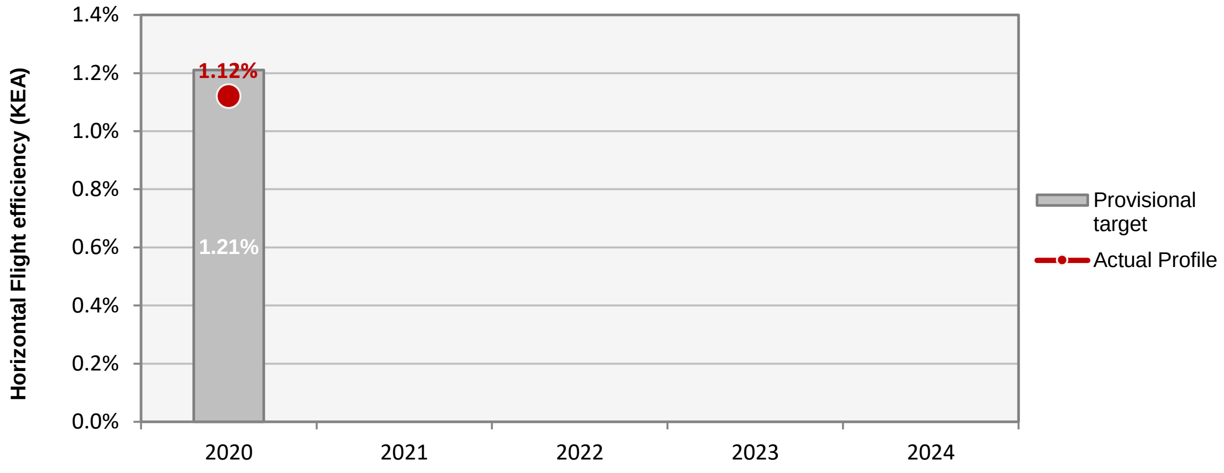
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
NAVIAIR	74	B	B	B	B	B

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

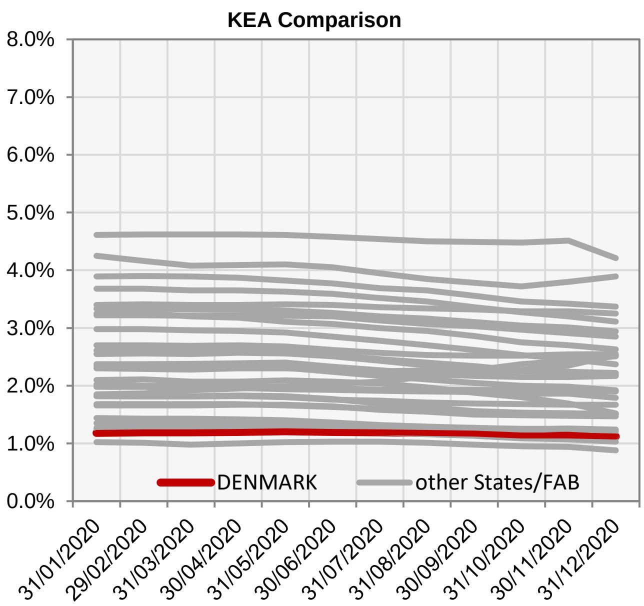
Observations

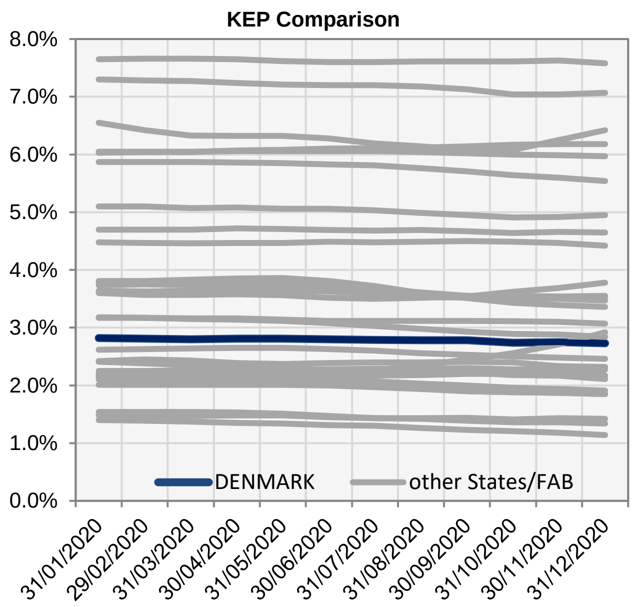
All EoSM components are below 2024 EoSM target levels. Improvements in safety management are still expected in all components during RP3 to achieve 2024 targets.

KEA					
	2020	2021	2022	2023	2024
Provisional target	1.21%				
Actual performance	1.12%				



End of month indicators evolution in 2020												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.18%	1.19%	1.19%	1.20%	1.21%	1.20%	1.19%	1.18%	1.17%	1.14%	1.14%	1.12%
KEP	2.82%	2.81%	2.80%	2.81%	2.81%	2.80%	2.79%	2.78%	2.78%	2.74%	2.75%	2.73%
KES	2.23%	2.24%	2.24%	2.24%	2.24%	2.24%	2.24%	2.25%	2.26%	2.25%	2.27%	2.26%



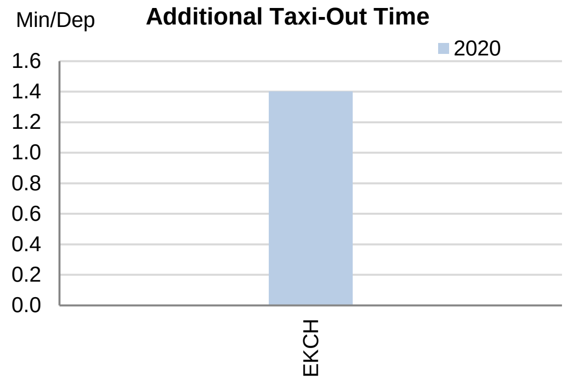


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

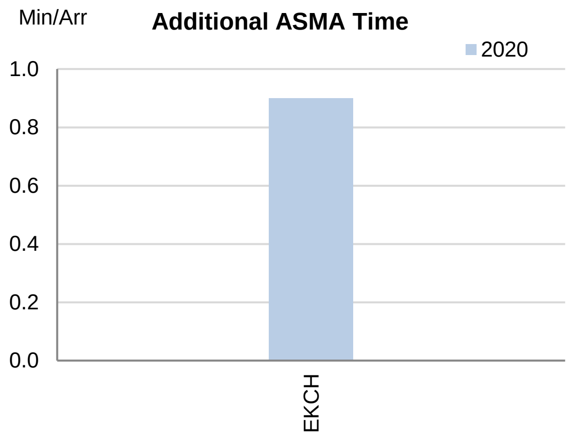
Denmark only has Copenhagen/Kastrup (EKCH) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the environmental indicators can be performed. Traffic at this airport in 2020 decreased by 63% with respect to 2019.
Copenhagen showed excellent performance in terms of additional times during RP2, and this performance has improved in 2020 with the reduction of traffic.
The share of CDO flights is 50.2% which is in the higher range of all observed values in 2020.

2. Additional Taxi-Out Time



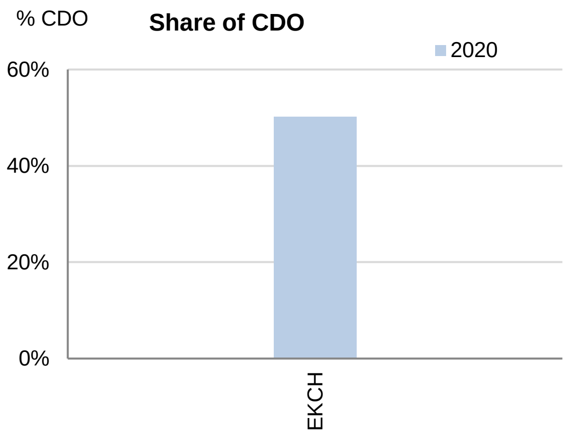
Additional times at Copenhagen (EKCH; 2019: 2.59 min/dep.; 2020: 1.4 min/dep.) averaged 0.67 min/dep. from April until the end of the year, resulting in an annual reduction of 46% with respect to the previous year.

3. Additional ASMA Time



The additional times in the terminal airspace also decreased in 2020 (EKCH; 2019: 1.07 min/arr.; 2020: 0.9 min/arr.) but in a smaller proportion compared to the additional taxi-out times or the additional ASMA times at other European airports.

4. Share of arrivals applying CDO



The share of CDO flights is 50.2% which is well above the overall RP3 value in 2020 (32.5%) and in the higher range of all observed values in 2020.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Copenhagen - Kastrup-EKCH	1.4					0.9					50%				

Update on Military dimension of the plan

FUA is fully implemented in Denmark, thus it is very hard to increase capacity any further. Denmark fulfils the capacity targets. Denmark already fulfils the environmental targets. The airspace design and procedures used are created in order to minimise the negative effects on the environmental performance.

Military - related measures implemented or planned to improve capacity

FUA is fully implemented in Denmark. NSA, ANSP and Military cooperates with the scope of further reduction of the impact of the military dimension. NSA monitors capacity performance.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Denmark	30%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Copenhagen	30%				

Initiatives implemented or planned to improve PI#6

None
NSA monitors the performance via regularly reporting. ANSP and Military evaluates the performance with the scope of further improvement if possible.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Denmark	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Copenhagen	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Denmark	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Copenhagen	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.07					
Actual performance	0.00					

NSA's assessment of capacity performance

The capacity KPI has been met.

Monitoring process for capacity performance

No comment provided.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	88	85					This is the amount of ATCOs in OPS and the expectation of the ATCOs in/out. Notice should be taken that this is in line with the ACE-definition and as such only a partial amount of the ATCO FTE's
Actual	123	123					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The Copenhagen FIR experienced a traffic reduction of 59% from 2019 levels, to 376k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

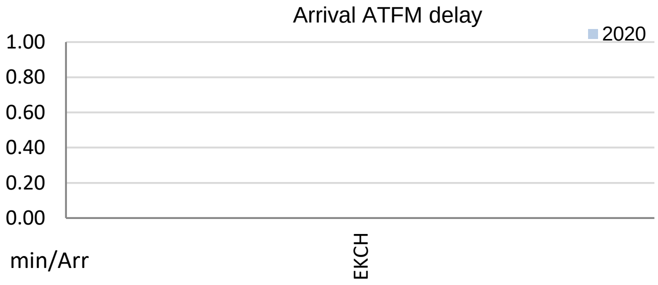
En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.07					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

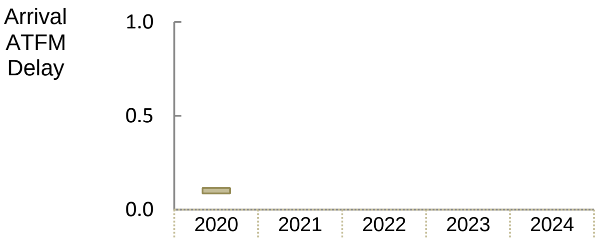
Denmark only has Copenhagen/Kastrup (EKCH) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at this airport in 2020 decreased by 63% with respect to 2019. Copenhagen registered zero arrival ATFM delays in the entire year and had very high slot adherence.

2. Arrival ATFM Delay



Copenhagen, that in the last years had registered low delays, observed zero ATFM delays in 2020 (EKCH; 2019: 0.07 min/arr.; 2020: 0 min/arr,)

3. Arrival ATFM Delay – National Target and Incentive Scheme

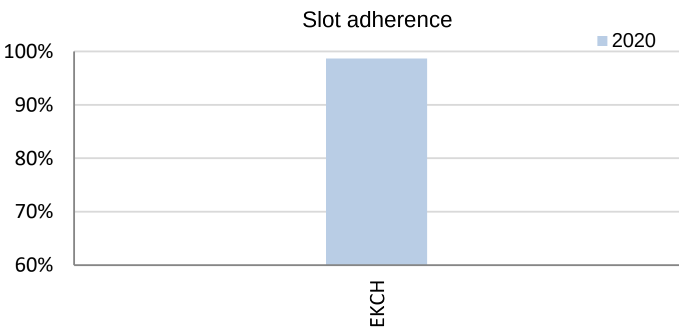


	2020	2021	2022	2023	2024
Actual	0.00				
Target	0.10				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Copenhagen also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Copenhagen's ATFM slot compliance was 98.7%. Only 32 flights in total in 2020 departed out of the STW, 31 of them early and 1 late.

Danish NSA reports: *Performance improved slightly. NSA monitors the performance via monthly reports from the ANSP, and yearly evaluation.*

5. ATC Pre-departure Delay

The quality of the airport data reported by Copenhagen is too low, preventing the calculation of this indicator.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Copenhagen.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)
To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Copenhagen was above 40% in April, August and October 2020, preventing the annual calculation of this indicator. Copenhagen usually has proper reporting, and the issue those months is likely to be due to the special traffic composition.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Copenhagen in 2020 was 6.79 min/dep. The higher delays per flight were observed in February and December.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

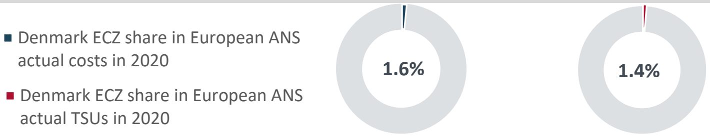
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

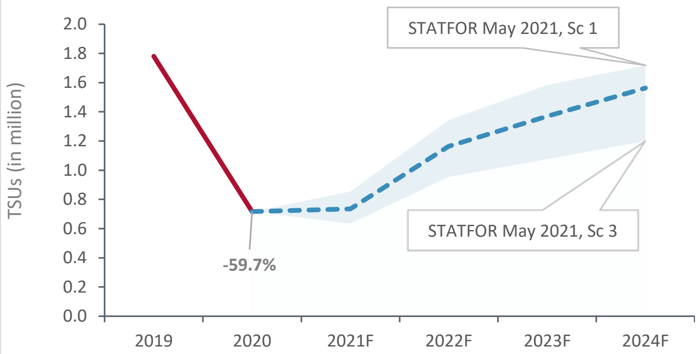
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Copenhagen - Kastrup-EKCH	0					98.7%					n/a					6.79				

Contextual economic information: en-route air navigation services

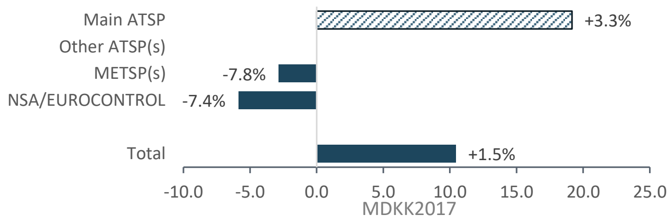
FAB:	DK-SE FAB
Main ATSP:	NAVIAIR
National currency:	DKK
Exchange rate:	1 EUR = 7.43692 DKK



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal DKK)	790 542 065	701 118 720	712 917 370	-9.8%	+1.7%
Inflation %	0.4%	0.7%	0.3%	-0.1 p.p.	-0.4 p.p.
Real en-route costs (DKK2017)	780 342 473	694 065 335	704 502 646	-9.7%	+1.5%
Total en-route Service Units (TSUs)	700 000	1 780 648	716 778	+2.4%	-59.7%
Real en-route unit cost per Service Unit (DKK2017)	**1 114.77**	**389.78**	**982.87**	**-11.8%**	**+152.2%**
Real en-route unit cost per Service Unit (EUR2017)	**149.90**	**52.41**	**132.16**	**-11.8%**	**+152.2%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were significantly lower (-11.8%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+2.4%) actual TSUs and lower (-9.7%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-59.7%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Denmark ECZ rose substantially (+152.2% in real terms) mainly due to the exceptional -59.7% traffic reduction. In the meantime, en-route costs slightly rose (+1.5%) in real terms.

The slightly higher en-route costs at CZ level are a combination of the following changes observed for the different entities: NAVIAIR - the main ATSP (+3.3%), the MET service provider (-7.8%) and the NSA/EUROCONTROL (-7.4%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of NAVIAIR en-route ANS costs (real DKK2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	369 890 068	378 989 082	416 152 477	+12.5%	+9.8%
Other operating costs	126 451 570	122 883 115	124 817 722	-1.3%	+1.6%
Depreciation	88 004 000	80 323 000	87 845 000	-0.2%	+9.4%
Cost of capital	46 993 685	29 509 000	48 344 204	+2.9%	+63.8%
Exceptional costs	46 853 009	-15 097 890	-68 511 009	-246.2%	+353.8%
VFR exempted flights	-11 491 936	-18 621 388	-11 503 394	+0.1%	-38.2%
Total NAVIAIR en-route costs (see also **Note 1**)	**666 700 395**	**577 984 920**	**597 145 000**	**-10.4%**	**+3.3%**

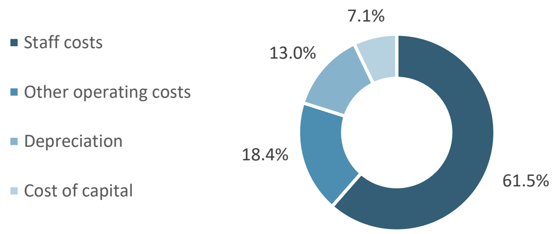
Analysis at main ATSP level

In 2020, NAVIAIR actual en-route costs were significantly lower (-10.4%) compared to those reported in the initial plans submitted in December 2020.

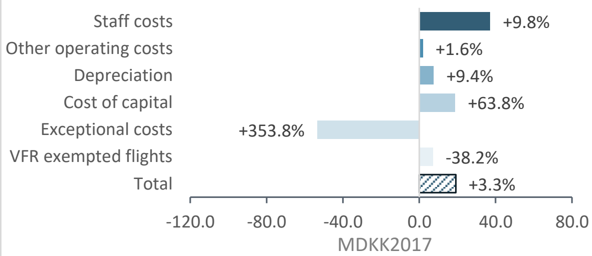
As indicated in the text box above, NAVIAIR actual 2020 en-route costs are higher (+3.3%, or +19.2 MDKK2017) compared to those reported in 2019 (see also **Note 1** at the end of this Report). This results from the combination of:
- higher staff costs (+9.8%, or +37.2 MDKK2017);
- slightly higher other operating costs (+1.6%, or +1.9 MDKK2017);
- higher depreciation costs (+9.4%, or +7.5 MDKK2017);
- significantly higher cost of capital (+63.8%, or +18.8 MDKK2017);
- significantly higher negative exceptional costs (+353.8%);
- significantly lower deduction for VFR exempted flights (-38.2%).

NAVIAIR reported significant "negative" costs in exceptional items reflecting a top-down approach applied to the total costs. These reported negative exceptional costs reduce the cost-base of NAVIAIR in ECZ. For this reason, these costs are excluded from the breakdown of 2020 costs by nature for NAVIAIR (pie-chart on the right-hand side).
Significantly higher staff costs are explained mainly by the voluntary resignation of staff to be fully effective in 2022, contractual wage increases, as well as less reimbursements of civil servant pensions compared to 2019. At the same time, the significant increase in the cost of capital is explained by a sharp increase in the WACC rate used to compute the cost of capital.

NAVIAIR actual 2020 en-route costs by nature

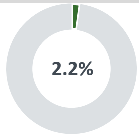


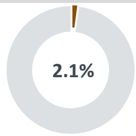
Actual costs variation by nature between 2019 and 2020



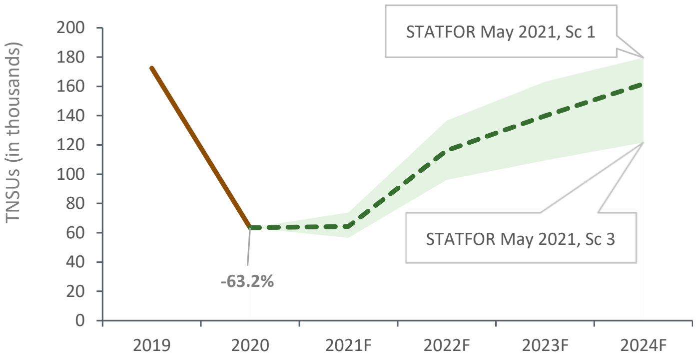
Contextual economic information: terminal air navigation services

Main ATSP:	NAVIAIR
National currency:	DKK
Number of airports in TCZ:	1

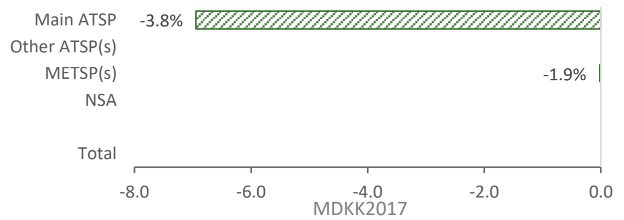




Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal DKK)	186 527 309	179 920 722	-3.5%
Inflation %	0.7%	0.3%	-0.4 p.p.
Real terminal costs (DKK2017)	184 369 253	177 395 128	-3.8%
Total Terminal Navigation Service Units	172 467	63 465	-63.2%
Real terminal unit cost per Terminal Navigation Service Unit (DKK2017)	**1 069.01**	**2 795.16**	**+161.5%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**143.74**	**375.85**	**+161.5%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Denmark TCZ comprises only Koebenhavn Kastrup airport.

Between 2019 and 2020, the terminal unit costs of Denmark TCZ rose substantially (+161.5% in real terms) mainly due to the exceptional -63.2% traffic reduction. In the meantime, terminal costs decreased (-3.8%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-63.2%) would not be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: NAVIAIR - the main ATSP (-3.8%) and the MET service provider (-1.9%) . A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of NAVIAIR Terminal ANS costs in TCZ (real DKK2017)	2019A	2020A	2020A vs 2019A
Staff	118 828 084	126 050 650	+6.1%
Other operating costs	37 846 790	34 089 374	-9.9%
Depreciation	13 142 000	15 367 000	+16.9%
Cost of capital	17 618 000	14 256 058	-19.1%
Exceptional costs	-4 599 383	-13 873 081	+201.6%
VFR exempted flights	0	0	
Total NAVIAIR terminal costs in TCZ (see also Note 1)	**182 835 491**	**175 890 000**	**-3.8%**

Analysis at main ATSP level

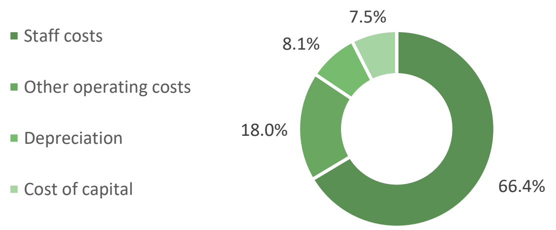
As indicated in the text box above, NAVIAIR actual 2020 terminal costs in TCZ are lower (-3.8%, or -6.9 MDKK2017) than those reported in 2019 (see also Note 1 at the end of this Report). This results from the combination of:

- higher staff costs (+6.1%, or +7.2 MDKK2017);
- lower other operating costs (-9.9%, or -3.8 MDKK2017);
- significantly higher depreciation costs (+16.9%, or +2.2 MDKK2017);
- significantly lower cost of capital (-19.1%, or -3.4 MDKK2017);
- significantly higher negative exceptional costs (+201.6%).

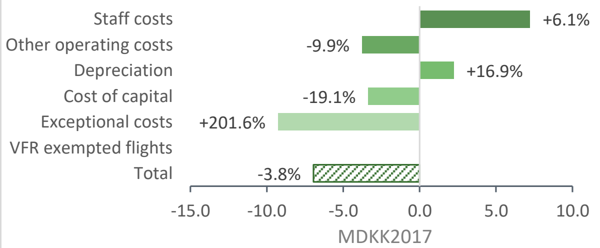
NAVIAIR reported a significant "negative" costs in exceptional items reflecting a top-down approach applied to the total costs. These reported negative exceptional costs reduce the cost-base of NAVIAIR in TCZ. For this reason, these costs are excluded from the breakdown of 2020 costs by nature for NAVIAIR (pie-chart on the right-hand side).

Significantly higher staff costs are explained mainly by the voluntary resignation of staff to be fully effective in 2022, contractual wage increases, as well as less reimbursements of civil servant pensions compared to 2019. Other operating costs were lower due to lower project, traveling training and administration costs.

NAVIAIR actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (DKK2017)	694 065 335	704 502 646	+1.5%
Real terminal costs (DKK2017)	184 369 253	177 395 128	-3.8%
Real gate-to-gate costs (DKK2017)	878 434 587	881 897 773	+0.4%
En-route share in gate-to-gate costs (%)	**79.0%**	**79.9%**	**+0.9 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Denmark remained fairly constant (+0.4%, or +3.5 MDKK2017) in real terms. This is a combination of a slight increase (+1.5%, or +10.4 MDKK2017) in en-route and a decrease (-3.8%, or -7.0 MDKK2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (79.9%) slightly rose (+0.9 p.p.) compared to the figure reported in 2019 (79.0%).

Breakdown of NAVIAIR gate-to-gate ANS costs (real DKK2017)	2019A	2020A	2020A vs 2019A
Staff	497 817 167	542 203 127	+8.9%
Other operating costs	160 729 906	158 907 095	-1.1%
Depreciation	93 465 000	103 212 000	+10.4%
Cost of capital	47 127 000	62 600 262	+32.8%
Exceptional costs	-19 697 273	-82 384 090	+318.3%
VFR exempted flights	-18 621 388	-11 503 394	-38.2%
Total NAVIAIR gate-to-gate costs (see also Note 1)	**760 820 411**	**773 035 000**	**+1.6%**

Analysis at main ATSP level

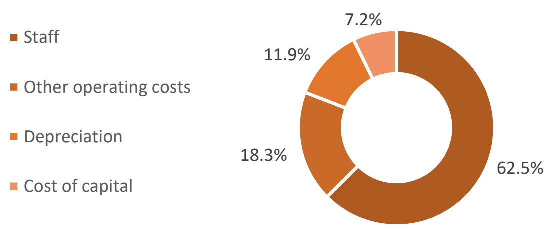
NAVIAIR actual 2020 gate-to-gate costs are slightly higher (+1.6%, or +12.2 MDKK2017) than those reported in 2019 (see also **Note 1** at the end of this Report). This results from the combination of:

- higher staff costs (+8.9%, or +44.4 MDKK2017);
- slightly lower other operating costs (-1.1%, or -1.8 MDKK2017);
- higher depreciation costs (+10.4%, or +9.7 MDKK2017);
- significantly higher cost of capital (+32.8%, or +15.5 MDKK2017);
- significantly higher negative exceptional costs (+318.3%);
- significantly lower deduction for VFR exempted flights (-38.2%).

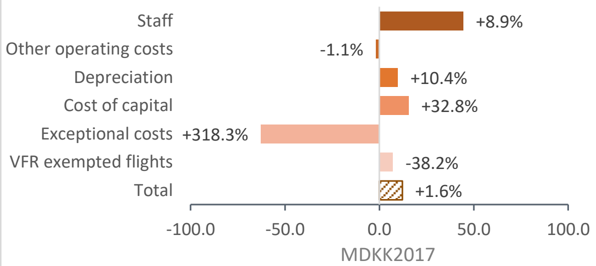
NAVIAIR reported a significant "negative" costs in exceptional items reflecting a top-down approach applied to the total costs. These reported negative exceptional costs reduce the cost-base of NAVIAIR. For this reason, these costs are excluded from the breakdown of 2020 costs by nature for NAVIAIR (pie-chart on the right-hand side).

Details on the drivers behind the changes observed above are provided in the respective analyses of NAVIAIR at en-route and terminal charging zone level.

NAVIAIR actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Denmark

Note 1: Changes in the methodology to calculate cost of capital and netted funding for NAVIAIR between RP2 and RP3

According to Denmark, 2020 actual costs for NAVIAIR cannot directly be compared with the actual costs in 2019, due to a change in method of calculating the cost of capital and netted funding between RP2 and RP3 for NAVIAIR. The change in method is necessary to align the calculation to the requirements in regulation 2019/317.

Annual Monitoring Report 2020
Local level view
Estonia

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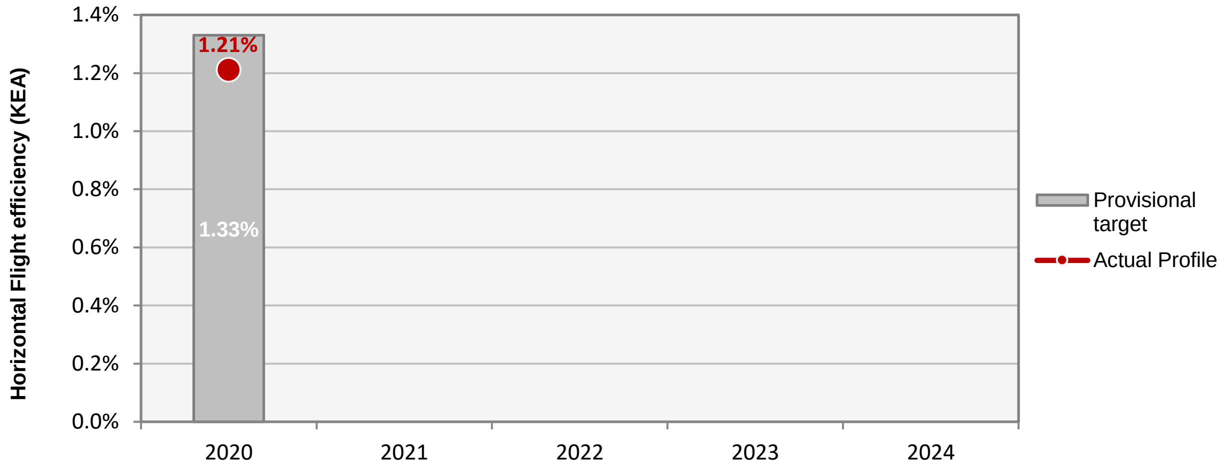
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
EANS	97	D	C	D	D	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

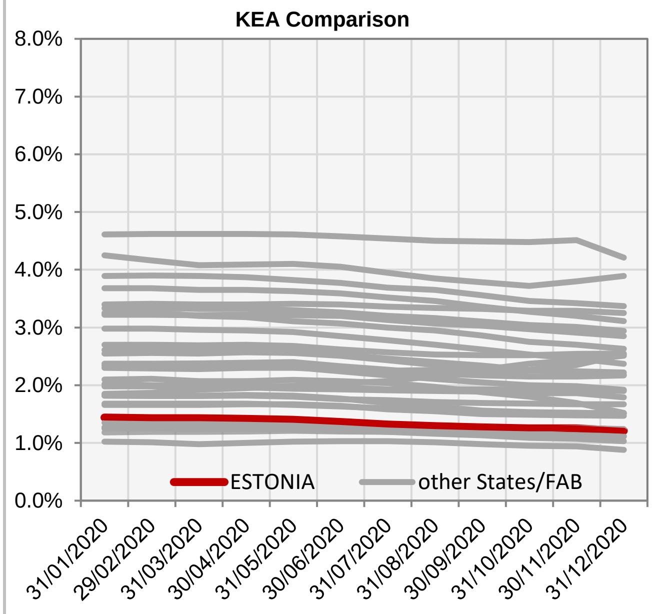
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

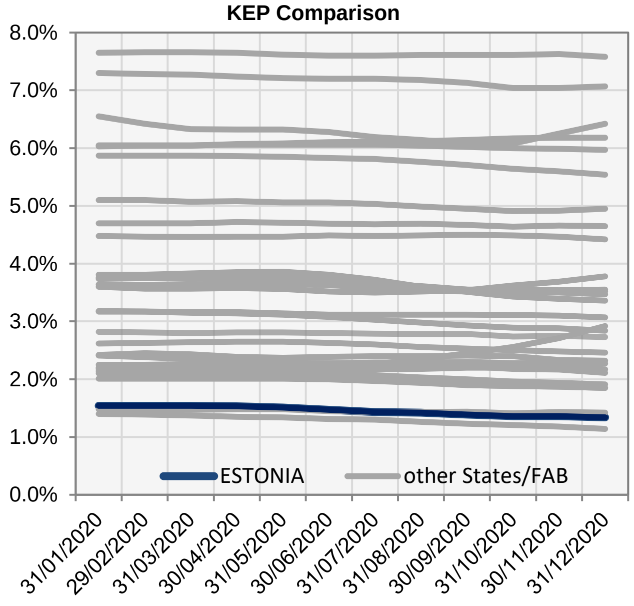
KEA	2020	2021	2022	2023	2024
Provisional target	1.33%				
Actual performance	1.21%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.44%	1.43%	1.43%	1.42%	1.40%	1.36%	1.32%	1.29%	1.27%	1.25%	1.25%	1.21%
KEP	1.54%	1.54%	1.54%	1.53%	1.51%	1.47%	1.43%	1.42%	1.39%	1.36%	1.36%	1.34%
KES	1.36%	1.36%	1.36%	1.36%	1.34%	1.30%	1.27%	1.26%	1.24%	1.22%	1.23%	1.23%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Estonia identified two airports, Tallinn and Tartu, as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 2 airports, additional taxi-out and ASMA times are not monitored and the environmental performance focuses only on the share of arrivals applying CDO.

After a traffic increase of 18% along RP2 (2019 vs 2015), traffic at these Estonian airports decreased by 56% in 2020 compared to 2019.

The share of CDO flights is in the higher range of all observed values in 2020.

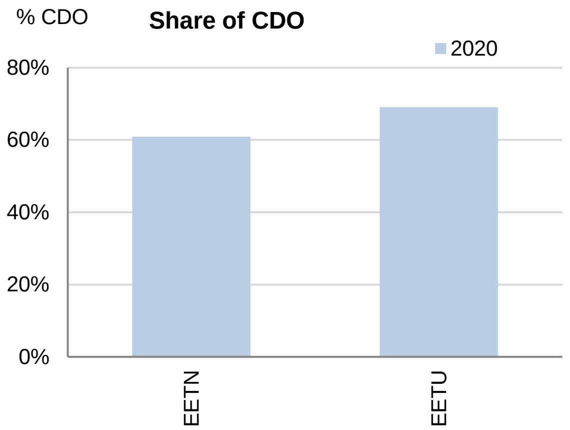
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Estonia.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in Estonia.

4. Share of arrivals applying CDO



The shares of CDO flights for both Tallinn (EETN) and Tartu (EETU) are above 60% which is well above the overall RP3 value in 2020 (32.5%) and in the higher range of all observed values in 2020.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Tallinn-EETN	-					-					61%				
Tartu-EETU	-					-					69%				

Update on Military dimension of the plan

No impact of MIL dimension on the capacity KPA.
The planning of airspace use at pre-tactical level is done via the civil/military joint unit Airspace Management Cell (AMC).

Military - related measures implemented or planned to improve capacity

Nil

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Estonia	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Tallinn	N/A				

Initiatives implemented or planned to improve PI#6

Nil

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Estonia	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Tallinn	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Estonia	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Tallinn	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay

	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.05					
Actual performance	0.00					

NSA's assessment of capacity performance

The en route capacity target set in the draft RP3 performance plan has been met for 2020.

Monitoring process for capacity performance

Review of the actual values from the NM dashboard.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)

	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	34	36					
Actual	40	30					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The Tallinn FIR experienced a traffic reduction of 58% from 2019 levels, to 96k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

En route Capacity Incentive Scheme

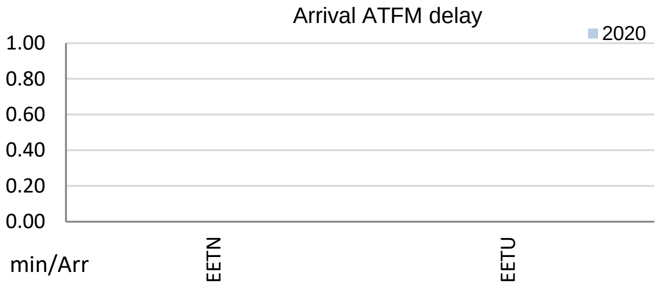
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.05					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

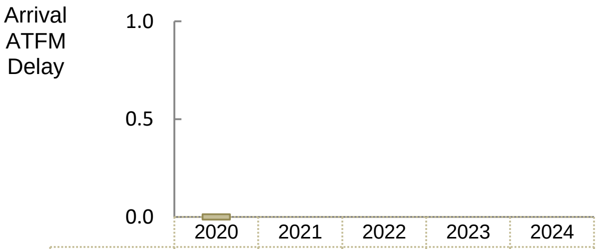
Estonia identified two airports, Tallinn and Tartu, as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 2 airports, pre-departure delays are not monitored and the capacity performance focuses on arrival ATFM delays and slot adherence.
After a traffic increase of 18% along RP2 (2019 vs 2015), traffic at these Estonian airports decreased by 56% in 2020 compared to 2019. No arrival ATFM delays were observed in the entire 2020 at these two airports and there were only a few regulated departures with a slot adherence of 98.5%.

2. Arrival ATFM Delay



No arrival ATFM delay was observed at the Estonian airports (Tallinn and Tartu) in 2020, in line with the performance during RP2.

3. Arrival ATFM Delay – National Target and Incentive Scheme

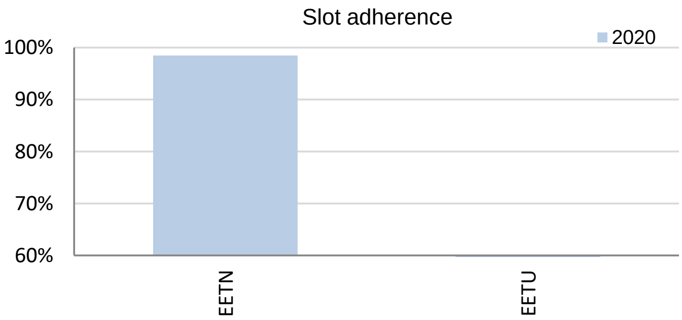


	2020	2021	2022	2023	2024
Actual	0.00				
Target	0.00				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



Only Tallinn had (a few) regulated departures in 2020. With the drastic drop in traffic, this already low number of regulated departures from Tallinn also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Tallinn's ATFM slot compliance was 98.5%, which in fact corresponds with only 3 departures departing late with respect to the STW in the entire 2020.

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Estonia.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Estonia.

7. Appendix

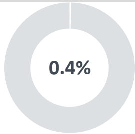
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Tallinn-EETN	0					98.5%					-					-				
Tartu-EETU	0					n/a					-					-				

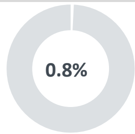
Contextual economic information: en-route air navigation services

FAB:	NEFAB
Main ATSP:	EANS
National currency:	EUR

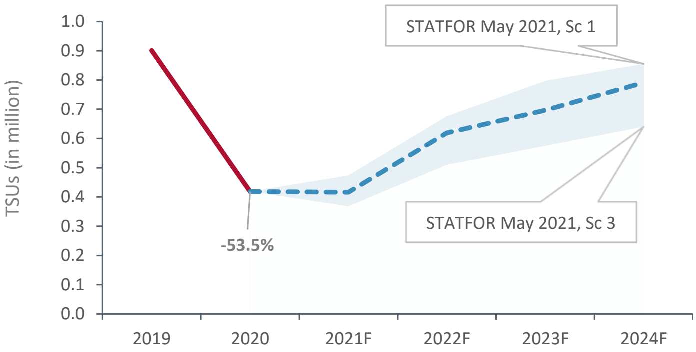
■ Estonia ECZ share in European ANS actual costs in 2020



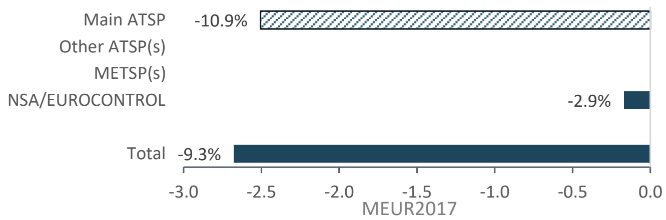
■ Estonia ECZ share in European ANS actual TSUs in 2020



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	28 206 212	29 778 642	26 963 329	-4.4%	-9.5%
Inflation %	-0.2%	2.3%	0.0%	0.2 p.p.	-2.3 p.p.
Real en-route costs (EUR2017)	27 383 743	28 808 243	26 132 099	-4.6%	-9.3%
Total en-route Service Units (TSUs)	389 000	900 911	418 749	+7.6%	-53.5%
Real en-route unit cost per Service Unit (EUR2017)	**70.40**	**31.98**	**62.41**	**-11.4%**	**+95.2%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were significantly lower (-11.4%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+7.6%) actual TSUs and lower (-4.6%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-53.5%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Estonia ECZ rose substantially (+95.2% in real terms) mainly due to the exceptional -53.5% traffic reduction. In the meantime, en-route costs decreased (-9.3%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: EANS - the main ATSP (-10.9%) and the NSA/EUROCONTROL (-2.9%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of EANS en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	11 690 893	12 489 387	11 174 334	-4.4%	-10.5%
Other operating costs	3 084 072	4 304 757	3 211 293	+4.1%	-25.4%
Depreciation	4 653 605	4 316 468	4 666 216	+0.3%	+8.1%
Cost of capital	1 327 311	1 847 640	1 400 594	+5.5%	-24.2%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total EANS en-route costs	**20 755 882**	**22 958 252**	**20 452 438**	**-1.5%**	**-10.9%**

Analysis at main ATSP level

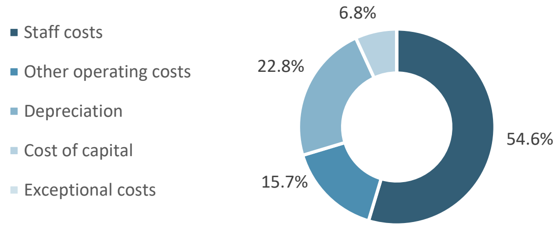
In 2020, EANS actual en-route costs were slightly lower (-1.5%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, EANS actual 2020 en-route costs are significantly lower (-10.9%, or -2.5 MEUR2017) compared to those reported in 2019. This results from the combination of:

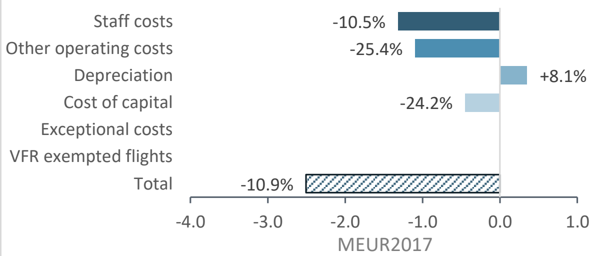
- significantly lower staff costs (-10.5%, or -1.3 MEUR2017);
- significantly lower other operating costs (-25.4%, or -1.1 MEUR2017);
- higher depreciation costs (+8.1%, or +0.3 MEUR2017);
- significantly lower cost of capital (-24.2%, or -0.4 MEUR2017).

EANS implemented measures to mitigate the impact of the COVID-19 crisis including the reduction in staff (some -20%), abandoning bonuses, cancellation of training, travelling and other non-essential costs. Additionally, Estonia indicates that due to the losses, the available EANS equity decreased resulting in a lower cost of capital.

EANS actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020

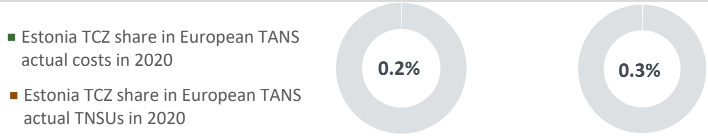


ESTONIA: Terminal Charging Zone

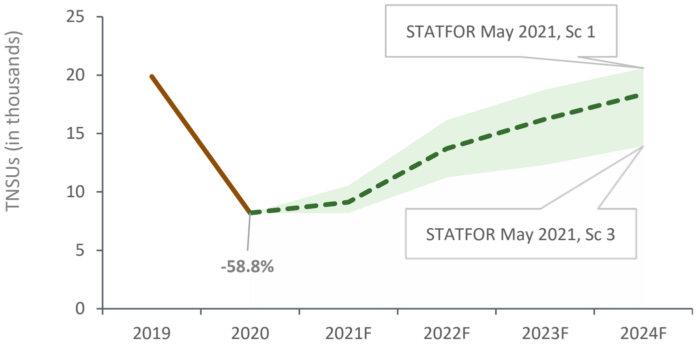
COST-EFFICIENCY

Contextual economic information: terminal air navigation services

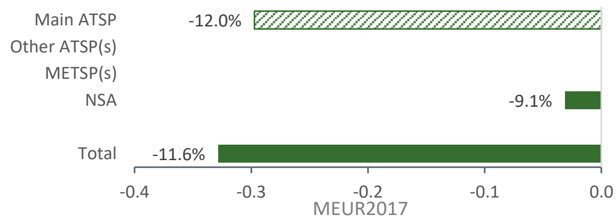
Main ATSP:	EANS
National currency:	EUR
Number of airports in TCZ:	2



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	2 899 704	2 572 617	-11.3%
Inflation %	2.3%	0.0%	-2.3 p.p.
Real terminal costs (EUR2017)	2 824 999	2 496 661	-11.6%
Total Terminal Navigation Service Units	19 884	8 201	-58.8%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**142.07**	**304.43**	**+114.3%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Estonia TCZ comprises 2 airports.

Between 2019 and 2020, the terminal unit costs of Estonia TCZ rose substantially (+114.3% in real terms) mainly due to the exceptional -58.8% traffic reduction. In the meantime, terminal costs significantly reduced (-11.6%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-58.8%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: EANS - the main ATSP (-12.0%) and the NSA (-9.1%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of EANS Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	591 867	688 713	+16.4%
Other operating costs	701 005	625 819	-10.7%
Depreciation	811 358	602 802	-25.7%
Cost of capital	379 993	269 619	-29.0%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total EANS terminal costs in TCZ	**2 484 222**	**2 186 953**	**-12.0%**

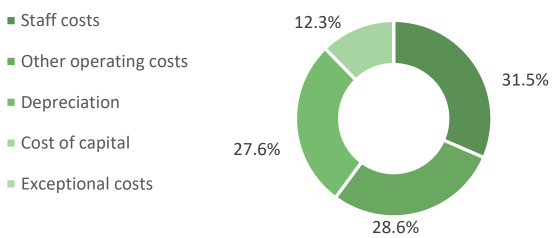
Analysis at main ATSP level

As indicated in the text box above, EANS actual 2020 terminal costs in TCZ are significantly lower (-12.0%, or -0.3 MEUR2017) than those reported in 2019. This results from the combination of:

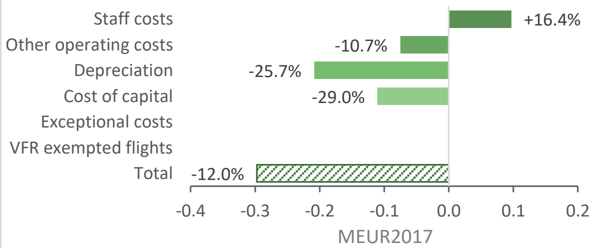
- significantly higher staff costs (+16.4%, or +0.1 MEUR2017);
- significantly lower other operating costs (-10.7%, or -0.1 MEUR2017);
- significantly lower depreciation costs (-25.7%, or -0.2 MEUR2017);
- significantly lower cost of capital (-29.0%, or -0.1 MEUR2017).

EANS implemented measures to mitigate the impact of the COVID-19 crisis including cancellations of training, travelling and other non-essential costs, as well as postponements of most investments. Additionally, Estonia indicates that due to the losses, the available EANS equity decreased resulting in a lower cost of capital.

EANS actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	28 808 243	26 132 099	-9.3%
Real terminal costs (EUR2017)	2 824 999	2 496 661	-11.6%
Real gate-to-gate costs (EUR2017)	31 633 242	28 628 760	-9.5%
En-route share in gate-to-gate costs (%)	**91.1%**	**91.3%**	**+0.2 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Estonia decreased (-9.5%, or -3.0 MEUR2017) in real terms. This is a combination of a reduction (-9.3%, or -2.7 MEUR2017) in en-route and a decrease (-11.6%, or -0.3 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (91.3%) remained fairly constant (+0.2 p.p.) compared to the figure reported in 2019 (91.1%).

Breakdown of EANS gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	13 081 254	11 863 047	-9.3%
Other operating costs	5 005 761	3 837 112	-23.3%
Depreciation	5 127 826	5 269 018	+2.8%
Cost of capital	2 227 633	1 670 213	-25.0%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total EANS gate-to-gate costs	**25 442 474**	**22 639 391**	**-11.0%**

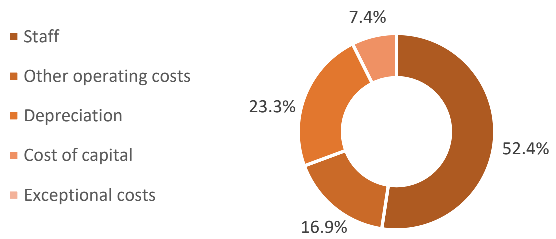
Analysis at main ATSP level

EANS actual 2020 gate-to-gate costs are lower (-11.0%, or -2.8 MEUR2017) than those reported in 2019. This results from the combination of:

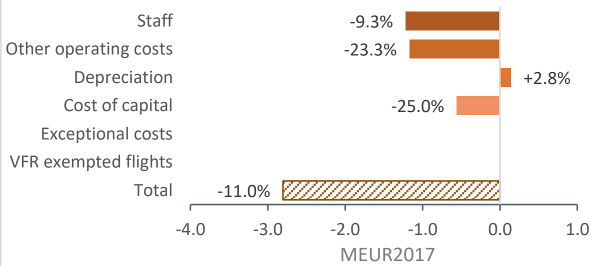
- lower staff costs (-9.3%, or -1.2 MEUR2017);
- significantly lower other operating costs (-23.3%, or -1.2 MEUR2017);
- higher depreciation costs (+2.8%, or +0.1 MEUR2017);
- significantly lower cost of capital (-25.0%, or -0.6 MEUR2017).

Details on the drivers behind the changes observed above are provided in the respective analyses of EANS at en-route and terminal charging zone level.

EANS actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Estonia

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Annual Monitoring Report 2020
Local level view
FABEC

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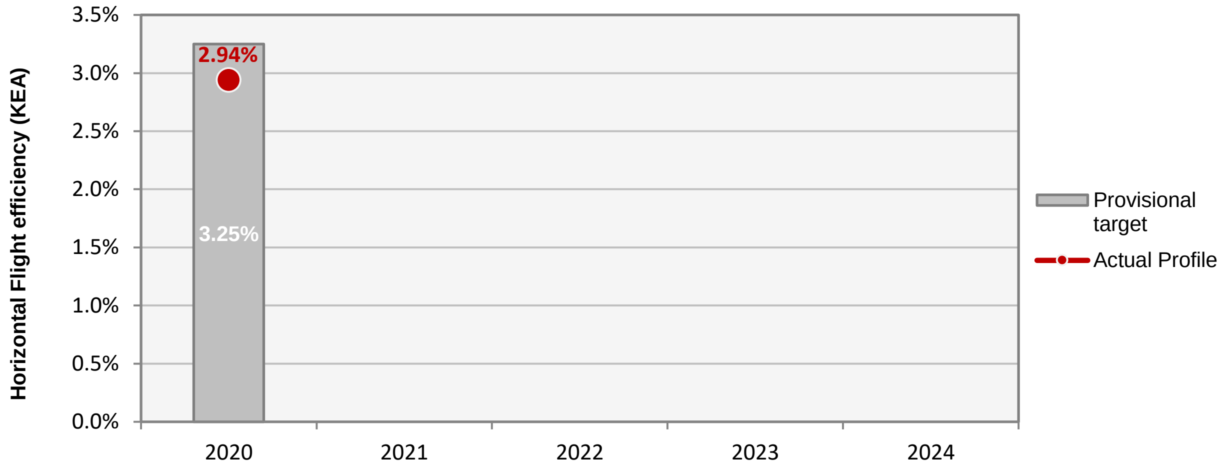
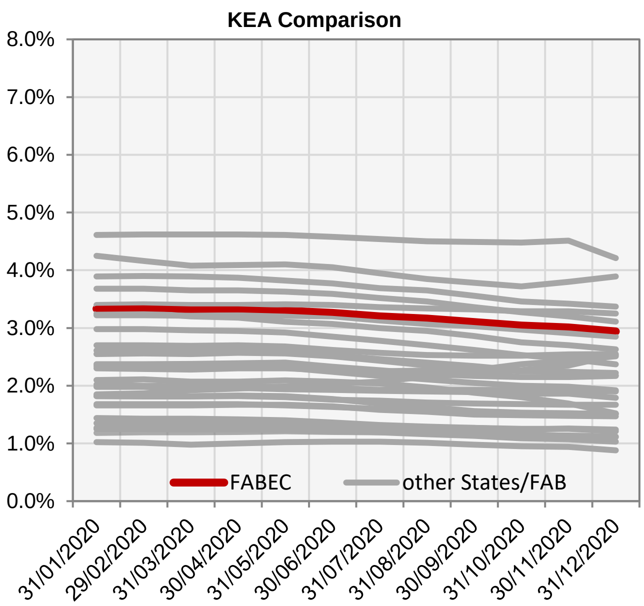
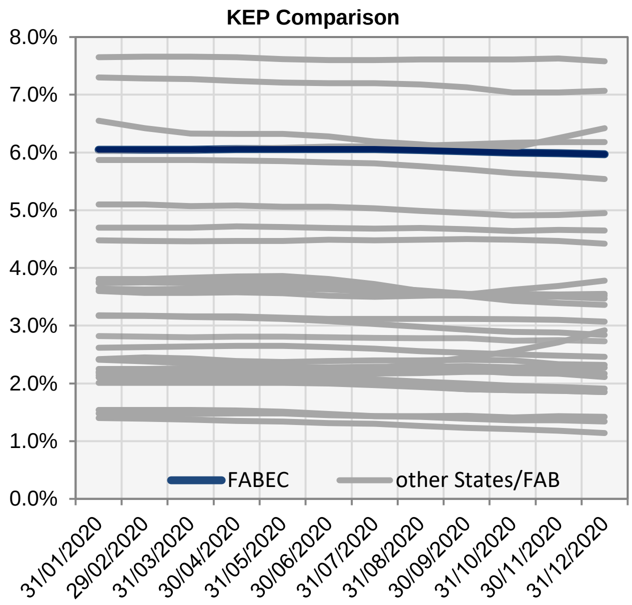
KEA	2020	2021	2022	2023	2024
Provisional target	3.25%				
Actual performance	2.94%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	3.33%	3.34%	3.32%	3.32%	3.30%	3.26%	3.20%	3.16%	3.10%	3.04%	3.01%	2.94%
KEP	6.05%	6.05%	6.05%	6.06%	6.06%	6.06%	6.06%	6.04%	6.02%	6.00%	5.99%	5.97%
KES	5.74%	5.74%	5.74%	5.74%	5.73%	5.73%	5.71%	5.69%	5.67%	5.64%	5.63%	5.60%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

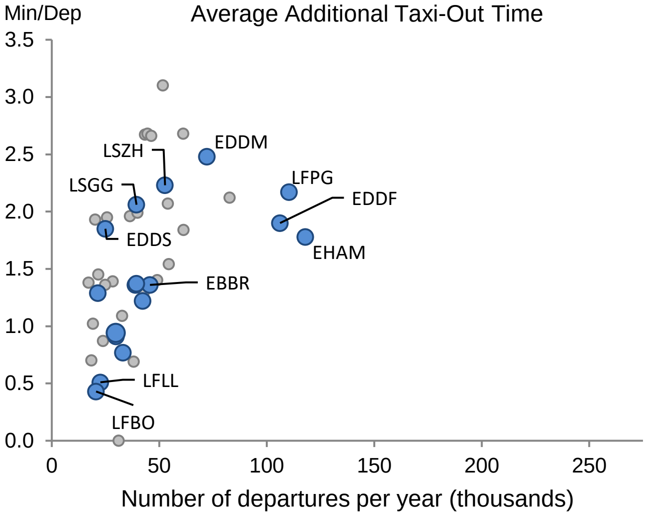
1. Overview

FABEC states identify a total of 82 airports as subject to RP3 monitoring,
The regulation IR (EU) 2019/317 establishes that additional taxi-out and ASMA times must be monitored only for airports with an average annual IFR traffic of at least 80 000 movements in the 2016-2018 period. In FABEC, 18 airports meet this criteria and are therefore monitored for these indicators. All these 18 airports provide the data required for the monitoring through the Airport Operator Data Flow.

According to FABEC Monitoring Report: Efficiency on the ground and within the last 40NM at FABEC airports has drastically improved in 2020 showing greater interdependence in the TMA than in en-route between traffic level and environmental performance.
Indeed, both additional taxi-out and ASMA times decreased greatly since the month of April with the very low traffic figures.

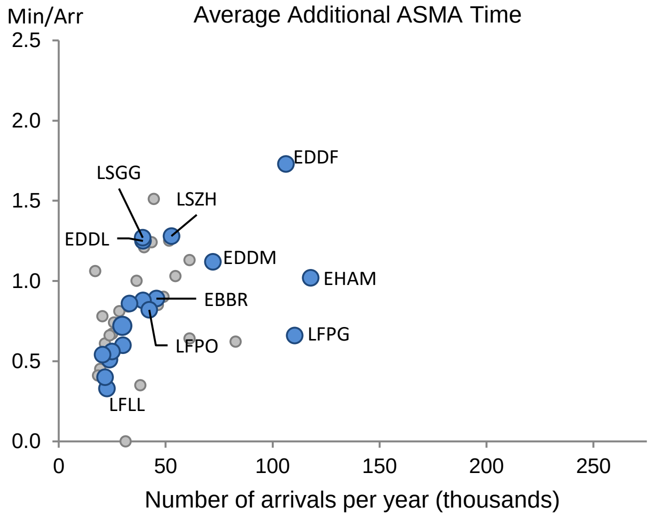
Despite the low traffic numbers, the share of CDO flights stayed rather low in 2020.

2. Additional Taxi-Out Time



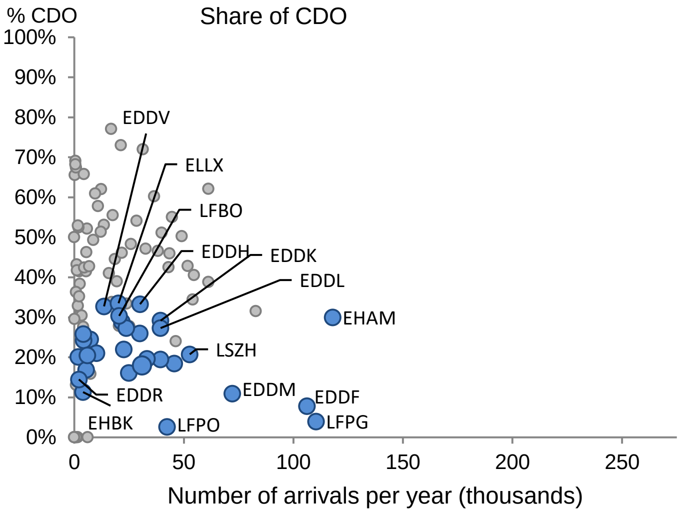
Additional taxi-out times at FABEC airports under monitoring decreased by more than 40% in 2020 due to the reduction in traffic, and even the busiest airports kept those times well under 2 min/dep. as of April.

3. Additional ASMA Time



Additional ASMA times in the beginning of the year were significantly higher than usual due to the storms Ciara and Dennis that affected many of the airports in central and north-western Europe. As of April the additional ASMA times at FABEC airports reduced drastically, averaging zero for a few months at many of these airports.
Towards the end of the year there was an increase in these ASMA times, but they remained well below one minute for arrival except for Cologne (EDDK) and Frankfurt (EDDF) where they reach 1.5 min/arr in average in December.

4. Share of arrivals applying CDO



The overall share of CDO flights is rather low for FABEC, with monthly overall values staying below 28% and a yearly overall value of 19.4% which is well below the RP3 value of 32.5%.

According to the FABEC monitoring report: *As France is concerned, CDO rate should drastically improve at the two major airports (CDG and Orly) by implementing PBN to ILS solutions.*

Update on Military dimension of the plan

Environment: Some considerations relating to the impacts of military activities on the environment :
As they deviate civil flights from their trajectories, the use of military training areas can have an impact on horizontal (HFE) or vertical flight efficiency (VFE). This normal way of working, which aims to segregate civil and military activities for flight safety reasons, should be considered as part of the performance baseline rather than a key factor degrading environmental KPIS.

The impact of military activities using RSA is minored by an efficient FUA process. At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces. At pre-tactical (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process validated by HLAPB. At tactical level (ACC/CRC), by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.

At each level, HLAPB, AMC or ACC/CRC, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, to be really efficient, AO and CFSP must be reactive and take into account ASM issues at each level and ANSP have to adapt the route network to create more DCT within military areas.

But more generally local circumstances (e.g. constrained airspace, proximity of international hubs, Military Mission Effectiveness, etc.) may prevent one State to reach the same "optimum" as another one. In addition, the sovereign mission that the military have to fulfill can differ from one State to another depending on its equipment and strategic goals. As a consequence, the airspace needs and related ASM procedures of the States may also differ.

Capacity: see above

Military - related measures implemented or planned to improve capacity

Most FABEC States have already introduced modular SUAs (TRA, TSA, CBA) allowing military booking of only the airspace necessary for a specific mission. FABEC States are working on mid-term improvements regarding implementation of ASM level 1,2,3 procedures and the interoperability of FABEC AMCs systems. Both of the above shall help to improve FABEC internal CDM and ATFCM while taking care of local circumstances (e.g. constrained airspace, proximity of international hubs, Military Mission Effectiveness, etc.)

PI#6 Effective use of reserved or segregated airspace - National Level

Ratio PI#6	2020	2021	2022	2023	2024
Belgium	98%				
France	71%				
Germany	51%				
Luxembourg	N/A				
Netherlands	91%				
Switzerland	92%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Brussels	N/A				
Bordeaux	N/A				
Brest	N/A				
Paris	N/A				
Marseille	N/A				
Reims	N/A				
Bremen	N/A				
Karlsruhe	N/A				
Langen	N/A				
Munich	N/A				
Amsterdam	N/A				
Geneva	92%				
Zurich	91%				
Maastricht	N/A				

Initiatives implemented or planned to improve PI#6

Belgium: It should be noted that the data above is valid for all levels of SUA, so from 4500'AMSL – UNL, whereby there are a lot of FUA procedures in place in Belgium to release military booked airspace pre-tactically and tactically for civil use, notably

- On D-1: all airspace not booked the first 3 hours of planned mil activity is release FL105+ (FL95 as from 20/05/21).
- On D-1: in TRA S non-booked airspace above FL365 is released for MUAC use
- For certain exercises compensation airspace is provided to mitigate impact on capacity
- As from 20th Apr 2021, a Rolling UUP trial has started to release non-booked airspace between H-3 and H; implementation, if deemed positive, may take place as from mid Jul 21

France: For France, 2 KPIs are provided NEGO and ENV. KPI NEGO, which is roughly around 93 % for years reflects the robustness of the national civil-military CDM process regarding ASM. KPIs ENV, which are roughly for years around 65 % (ratio between the real use and AUP planning at D-1) and around 80 % (ratio between the real use and AUP/UUP processes at H-3), are considered as efficient as they have to take into account several mission cancellation causes (Weather, Technical or Operational reasons).

To tackle this issue, civil and military AMC members work together to improve the situation and 15 indicators regarding 3 domains (NEGO, RELIABILITY, CURA) are currently designed in coordination with PRISMIL Team. Implementation is expected in the Fall of 2021. Even all efforts, a glass ceiling will still exist as some military mission cancellation causes remain unpredictable.

Switzerland: The Rolling UUP and Procedure 3 were introduced in Switzerland on 01.01.2016. Since then the PI#6 ratio improved constantly over years implying more reliable flight planning by AUs across Swiss airspace. Nevertheless, additional improvements are foreseen at the mid/long term such as introduction of VPA, improved CDM-ATFCM, improved civ-mil ASM Tools, etc. CH NSA is in the process of defining specific national PIs and/or "Use cases" in order to better assess (and improve, if necessary) the effectiveness of national FUA processes.

PI#7 Rate of planning via available airspace structures - National Level

Ratio PI#7	2020	2021	2022	2023	2024
Belgium	N/A				
France	N/A				
Germany	N/A				
Luxembourg	N/A				
Netherlands	N/A				
Switzerland	53%				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Brussels	N/A				
Bordeaux	N/A				
Brest	N/A				
Paris	N/A				
Marseille	N/A				
Reims	N/A				
Bremen	N/A				
Karlsruhe	N/A				
Langen	N/A				
Munich	N/A				
Amsterdam	N/A				
Geneva	39%				
Zurich	59%				
Maastricht	N/A				

Initiatives implemented or planned to improve PI#7

France: No data is available today. To tackle this issue, civil and military AMC members work together to improve the situation and 15 indicators regarding 3 domains (NEGO, RELIABILITY, CURA) are currently designed in coordination with PRISMIL Team. Implementation is expected in the Fall of 2021. Even all efforts, a glass ceiling will still exist as some military mission cancellation causes remain unpredictable.

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PI#8 Rate of using available airspace structures - National Level

Ratio PI#8	2020	2021	2022	2023	2024
Belgium	N/A				
France	N/A				
Germany	N/A				
Luxembourg	N/A				
Netherlands	N/A				
Switzerland	38%				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Brussels	N/A				
Bordeaux	N/A				
Brest	N/A				
Paris	N/A				
Marseille	N/A				
Reims	N/A				
Bremen	N/A				
Karlsruhe	N/A				
Langen	N/A				
Munich	N/A				
Amsterdam	N/A				
Geneva	29%				
Zurich	42%				
Maastricht	N/A				

Initiatives implemented or planned to improve PI#8

France: No data is available today. To tackle this issue, civil and military AMC members work together to improve the situation and 15 indicators regarding 3 domains (NEGO, RELIABILITY, CURA) are currently designed in coordination with PRISMIL Team. Implementation is expected in the Fall of 2021. Even all efforts, a glass ceiling will still exist as some military mission cancellation causes remain unpredictable.

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Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional FAB Target	3.45					
Actual performance	0.42					

Local performance	2020	2021	2022	2023	2024	Observations
skeyes	0.06					
DSNA	0.61					
DFS	0.18					
LVNL	0.01					
Skyguide	0.04					
MUAC	0.01					

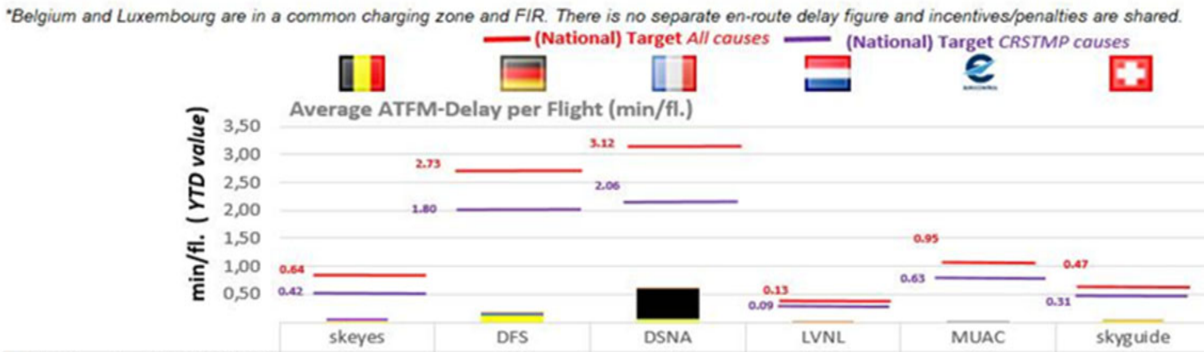
FABEC NSAs' assessment of capacity performance

2020 en route capacity target set in the draft RP3 FABEC performance plan has been met for 2020. However, it should be noted that, as defined in Article 3 (3) of the Commission implementing regulation (EU) 2020/1627, incentive scheme in the key performance area of capacity will cover only years 2022 - 2024. No bonus will be awarded to FABEC ANSP for 2020 achievement.

The massive traffic drop due to the COVID-19 pandemic outbreak in Europe as from March 2020 (-57% for the whole year in the FABEC area) has reduced the 2020 March - December traffic to a very low level (from -42% in March down to -90% in April).

Nevertheless, it should be noted that between January and March 2020, before the traffic downturn, some FABEC ACCs were still facing some capacity and staffing issues (DFS, DSNA and skeyes) due to a lack of qualified ATCO, and some industrial actions in French ACC due to discussion relating to the introduction of a new national pension scheme law, generating some delays.

The graph below illustrates the 2020 yearly all-causes and CRSTMP delay cause achievements of FABEC ANSP with regards to their national contribution to the FABEC target, with detailed information about delay causes.



	skeyes	DFS	DSNA	LVNL	MUAC	skyguide
All others (ex. CRSTMP & WI)		0,00	0,02	0,00	0,00	0,00
Industrial Action "I"		0,00	0,51			
Weather "W"		0,00	0,00	0,00	0,00	
Special event "P"	0,01	0,00	0,00	0,00	0,00	0,00
Airspace Mgmt. "M"		0,01	0,00		0,00	
Equipment "T"		0,00	0,00			0,00
Staffing "S"	0,04	0,04	0,03	0,00	0,01	0,00
Routeing "R"						
Capacity "C"	0,01	0,12	0,04	0,01	0,00	0,03
CRSTMP:	**0,06**	**0,17**	**0,08**	**0,01**	**0,01**	**0,04**
TOTAL:	**0,06**	**0,18**	**0,61**	**0,01**	**0,01**	**0,04**

Monitoring process for capacity performance
The monitoring for en-route capacity performance is carried out under the auspices of the FABEC Financial and Performance Committee (FPC), counterpart of the European Commission at the States side, consulting and reporting to FABEC Council as appropriate. On a monthly basis and through the AFG/PMG (ANSP FABEC Group / Performance Management Group) the ANSPs collectively submit a report to the FPC, based on PRU available data, consolidated and analysed, on their joint progress in achieving the FABEC target set and reference or indicative values and on the results and analysis of the en- route capacity achievement. In case the FABEC target set and/or the annual/reference values are threatened not to be met, AFG/PMG is asked to propose to FPC possible corrective measures which the ANSPs determine fit to react to the weaker performance at FAB, national and/or ACC level, in order to remedy the situation. The FPC analyses the reports, assesses the actions considered by the ANSPs together with the necessity of appropriate measures to be taken by the States or the NSAs and makes an advice to the proposals, made by the AFG/PMG, to the FABEC Council for such appropriate measures, after consultation with the AFG/PMG. The potential corrective measures take into account the seriousness of the risk of not meeting the targets set and/or the annual/reference values. The FPC is also responsible for the management of the Capacity KPA financial incentive schemes (see section 3 of this monitoring report). This monitoring process is described in the FABEC FPC States Performance Process description, regularly updated.

Capacity Planning
Initial Network Operation Plan 2020 launched in Winter 2019/2020 has been overwhelmed by the COVID-19 pandemic and the massive drop of traffic. A new NOP Recovery Plan process initiated and launched by the Network Manager and its first edition was published on 30 April 2020, as European traffic began a slow recovery from its lowest point of just 2,099 flights across the network on 12 April 2020. Since then a weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels. FABEC ANSPs and ACCs are of course part of this process and contribute to the provision for a consolidated European network view of the evolution of the air traffic, enabling the planning of the service delivered in the recovery phase to match the expected air traffic demand in a safe, efficient and coordinated manner. However, the 10% capacity buffer requested by the NM, the recommendation for zero delay and the continuous optimistic traffic forecast selected have naturally an adverse impact on ANSPs finance.

ATCO in OPS (FTE)

Brussels	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	80.5	81.5					

Bordeaux	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	218.0	229.2					

Brest	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	249.2	247.6					

Marseille	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	283.4	291.2					

Paris	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	256.8	248.2					

Reims	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	195.4	186.2					

Bremen	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	260	249					

Karlsruhe	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	438	435					

Langen	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	473	466					

Munich	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	309	303					

Amsterdam	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	86.9	88.8					

Geneva	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	117	120					

Zurich	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	121	113					

Maastricht	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	-	-					FABEC declined to provide information on planned ATCOs in OPS
Actual	284.1	282.5					

Additional comments from FABEC on ATCO in OPS
Regarding ATCO planning, FABEC NSAs and ANSPs question if ATCO planning figures are legally required by the performance regulation to be included in the Performance Monitoring for RP3, as it is not a prescribed indicator. In addition, FABEC NSAs question if this is the right level of detail to be monitored by the EC. Technically the plans are and will always be subject to change, creating the unnecessary burden of tracking, supervising and explaining the figures within the SES performance scheme domain. In addition, the details of the planned evolution of ATCO numbers within an ANSP with several ACCs are socially sensitive. However ATCO hiring and assignment is one of the major driver for current capacity and staffing issues solving. ACE figures are provided and can be referred to. Nevertheless, FABEC States consider that they cannot be considered as a commitment where planning figures are requested, due to the high level of uncertainties related to such ATCO recruitment plans management. These figures, even when provided on annual basis, can only be regarded as snapshot information, i.e. a situation at one point in time which does not guarantee a realistic view throughout the entire duration of RP3. There are many factors with a high level of uncertainty that have an impact on the ATCO planning: first of all, the Labour Law and the Collective Labour Agreement in place in an ANSP play a major role in the availability of ATCOs to fulfil the ops needs. Then, there are classical uncertainty factors of general staff planning like the actual rate of retirement, the absence rate of employees, as well as maternity and parent leave. Moreover, ATCOs mobility has become a severe issue recently, leading to high rate of unforeseen leaves. Another factor which cannot be significantly mitigated further impacting the availability of ATCOs is the number of suitable applicants, the failure rate of the theoretical training at the academies and the success rate during the on-the-job training phases of trainees. The final retirement age is firmly set by law, but in many countries employees may go earlier. ANSPs can only assume a certain amount of people opting out/in. It is common culture now that companies offer varying working hours to enable employees to adjust their work to different phases of their life. Again, ANSPs can only assume a certain amount of people opting in/out. On top of all that, future social agreements will significantly determine the ATCO availability per person and by that the total available FTE per ANSP. Before the planned ATCO FTE can be reported in an harmonised and consistent way, a revised specification for information disclosure is required, clearly describing how to count ATCOs partially working in projects (another uncertainty factor) and (very important) standardising the assumptions for the uncertainties mentioned above. For those ANSP having more than one national ACC, ATCO hiring plan are managed at ANSP level but changes in traffic volumes or flows and volatility or local human resources factors can influence the assignment to different ACCs. It should also be noted that some social agreements regarding numbers of ATCO to be recruited and working conditions (salaries, extra hours, rostering) are currently under renegotiation due to the impact of covid-19 pandemic and ongoing redrafting of RP3 performance plan according to new RP3 targets. Outcomes of such negotiations, in which ANSP and unions but also Ministries of Finance or Public administration are involved, have an impact on those figures.
Application of Corrective Measures for Capacity (if applicable)
No comment provided.
Summary of capacity performance
FABEC experienced a traffic reduction of 57% from 2019 levels, to 2 719k flights. The individual ANSPs experienced the following traffic reductions: Belgium (skeyes) 55%; EUROCONTROL (MUAC) 55%; France (DSNA) 59%; Germany (DFS) 56%; Luxembourg (ANA) 47%; Netherlands (LVNL) 53% and Switzerland (skyguide) 59%. The FABEC traffic level was accommodated with 1 124k minutes of en route ATFM delays to airspace users. 97% of delays occurred between January and March 2020, 62% of delays were attributed to industrial action (ATC); 22% were attributed to ATC capacity and 10% were attributed to ATC staffing.

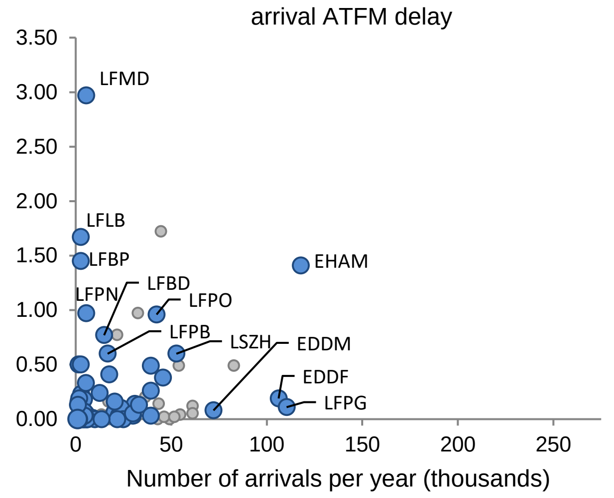
En route Capacity Incentive Scheme						
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional FAB target*	2.28					*Only CRSTMP delays considered and targets are updated annually.
Deadband +/-	0.06					
Actual						

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

FABEC states identify a total of 82 airports as subject to RP3 monitoring,
The regulation IR (EU) 2019/317 establishes that ATC pre-departure delay and All Causes pre-departure delay must be monitored only for airports with an average annual IFR traffic of at least 80 000 movements in the 2016-2018 period. In FABEC, 18 airports meet this criteria and are therefore monitored for these indicators. All these 18 airports provide the data required for the monitoring through the Airport Operator Data Flow, although in many cases the data quality does not allow for the calculation of the ATC pre-departure delay indicator.
Due to the drop in traffic, arrival ATFM delays and the number of regulated departures have reduced to nearly zero. Due to the extraordinary circumstances, the incentive scheme shall not be applied for 2020 performance.

2. Arrival ATFM Delay



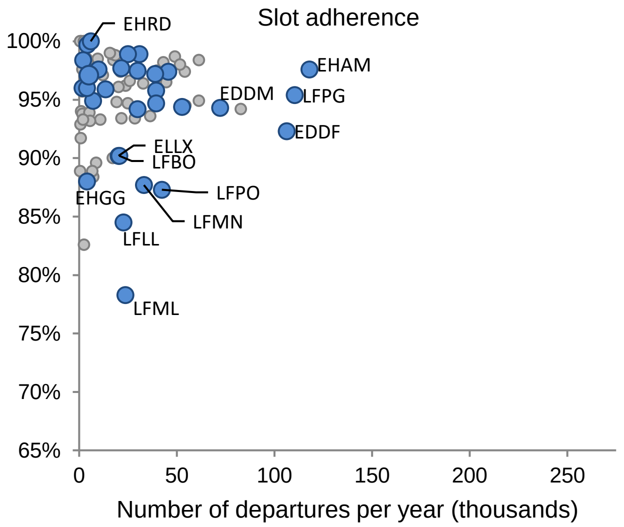
The drastic reduction in traffic as of the month of April had a direct impact on the ATFM measures at most FABEC airports where arrival ATFM delays have virtually disappeared since then.
Most of the delays at FABEC airports were due to weather (66%) followed by industrial action (14%) and aerodrome capacity (8%).
Several of the smaller French airports in terms of traffic actually had some of the highest arrival ATFM delays per flight in the SES area.

3. Arrival ATFM Delay – National Targets and Incentive Schemes

The 2020 performance by all FABEC states met the provisional national targets on arrival ATFM delay.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



Within FABEC slot adherence varies widely amongst the airports. Most of the airports within FABEC showed a compliance above 90%, and about half of those above 95%.
But there are some other airports that showed worse compliance than most European airports, and in the case of Marseille, below the minimum required 80% (for the full set of data please refer to the detailed tables per state).
Nevertheless it seems some technical issues in the calculation of the CTOT might have influenced the calculation of the indicator at some French airports.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF), which is implemented at all the airports above 80 000 movements in FABEC.

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport. In 2020 most of FABEC airports have a very high share of "unexplained" delay, situation worsened since the Covid-19 pandemic outbreak in March 2020, as the share of special flights that might not report the reasons for their delay has been higher since then. However, some FABEC airports (EDDB and EDDK) still have to implement properly this reporting, as the data quality issue date from before April 2020.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL which has only been the case for Nice (LFMN) and Zurich (LSZH) in 2020. In order to provide information for remaining FABEC airports, data provided by the airlines through the Aircraft Operator Data Flow (AODF) published by PRU has been used by FABEC NSA for other airports for this reporting even if it covers only about 70% of the flights, while the airport operator data flow covers all flights at the airport. Nevertheless EUROCONTROL cannot use this data for the monitoring as it is not established as the official data source.
in 2020 the share of commercial versus "other special" flights was very far from the normal balance, which created a problem for the reporting but, according to EUROCONTROL the situation is a better as of the beginning of 2021.
In order to improve the situation EUROCONTROL contacts regularly these airports to check on the status of the reporting and provide support in the final correct implementation of the APDF. EUROCONTROL is also part of an ACI sub-group (APN) that includes several airports and informs them regularly on data provision issues.

EUROCONTROL has prepared, on FABEC NSAs request, a summary of the situation in terms of the reporting with the different FABEC airports. Potential actions to enhance this reporting will then be studied.

Annual Monitoring Report 2020
Local level view
Belgium and Luxembourg

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Effectiveness of Safety Management

	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Skeyes	71	B	B	C	B	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

One out of five EoSM components of the ANSP meet the 2024 target level, namely "Safety Promotion". The other four are below 2024 target levels and are expected to improve in the next years of RP3.

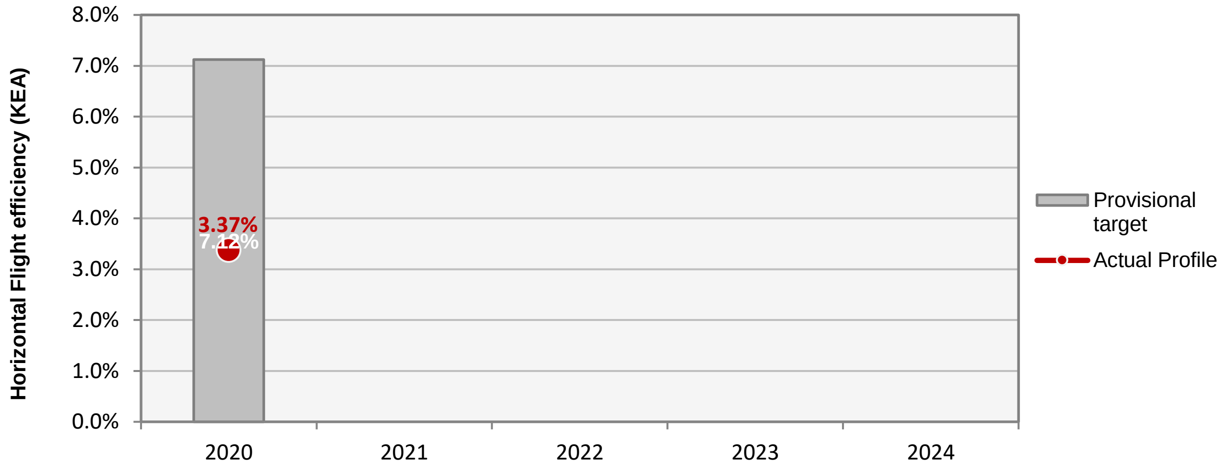
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
ANA LUX	80	B	B	C	B	B

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

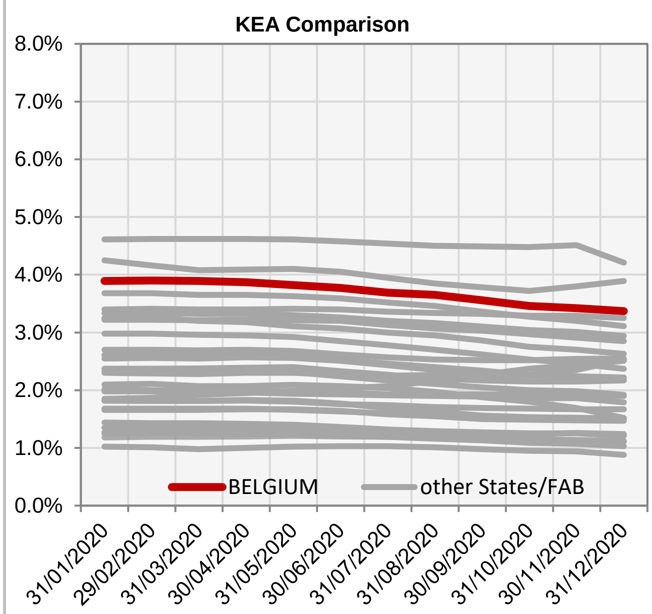
All EoSM components are below 2024 EoSM target levels. Improvements in safety management are still expected in all components during RP3 to achieve 2024 targets.

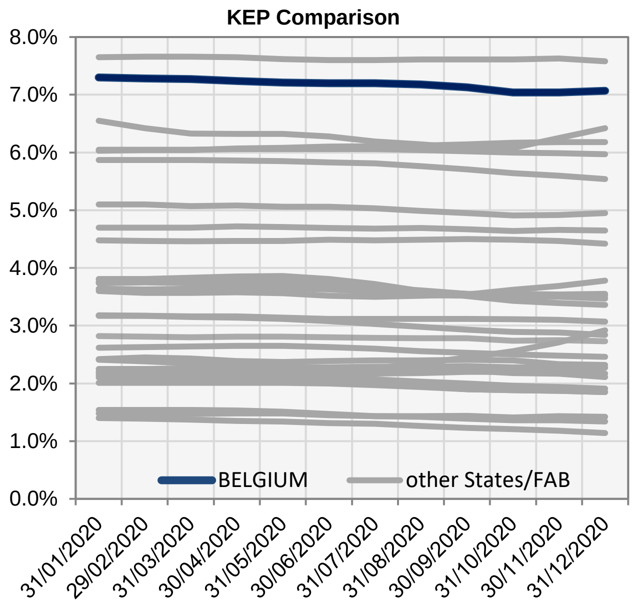
KEA	2020	2021	2022	2023	2024
Provisional target	7.12%				
Actual performance	3.37%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	3.89%	3.90%	3.89%	3.87%	3.82%	3.77%	3.69%	3.65%	3.56%	3.46%	3.42%	3.37%
KEP	7.30%	7.28%	7.27%	7.24%	7.21%	7.20%	7.20%	7.18%	7.13%	7.04%	7.04%	7.07%
KES	6.84%	6.82%	6.80%	6.78%	6.74%	6.72%	6.70%	6.68%	6.61%	6.50%	6.49%	6.53%



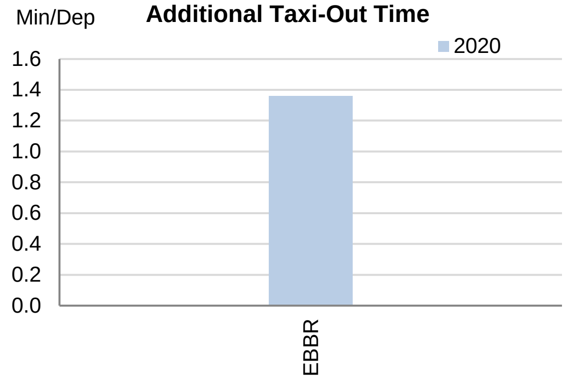


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

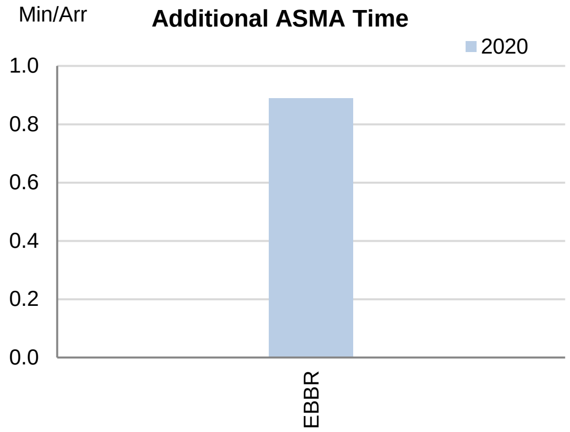
Belgium identifies only Brussels airport as subject to RP3 monitoring.
The Airport Operator Data Flow is fully established and the monitoring of all environmental indicators can be performed.
Traffic levels in 2020 decreased by 60% at Brussels airport. This drastic drop in traffic had an impact on the additional times with notable reductions since the month of April.
Despite the low traffic numbers, the share of CDO flights stayed rather low in 2020.

2. Additional Taxi-Out Time



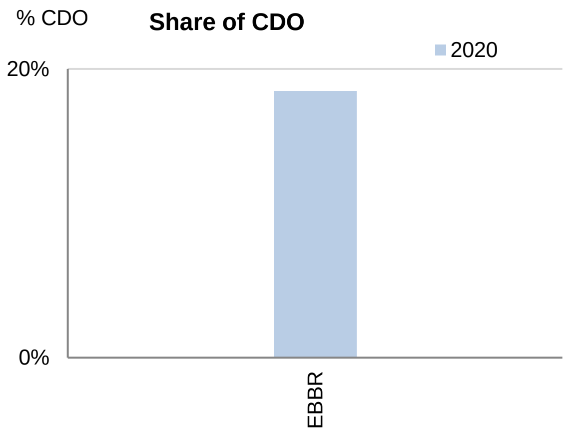
Additional taxi-out times at Brussels decreased in 2020 (EBBR; 2019: 2.21 min/dep.; 2020: 1.36 min/dep.;)
This indicator was quite stable for Brussels for the last 5 years with monthly values around the 2 min/dep. This trend changed as of April 2020, when these additional taxi-out times were close to zero and the rest of the year have kept below one minute per departure.

3. Additional ASMA Time



Additional ASMA times at Brussels decreased in 2020 (EBBR; 2019: 1 min/arr.; 2020: 0.89 min/arr.)
For the last 5 years, Brussels kept the additional ASMA times around or below the minute per arrival, showing very good performance.
In the beginning of 2020 these times increased reaching almost 2 min/arr in February. Between April and September, due to the drastic reduction in traffic, the additional ASMA times were practically zero.

4. Share of arrivals applying CDO



The share of CDO flights for Brussels is 18% which is quite low compared to other airports with similar traffic numbers and the overall RP3 value (32.5%).
According to the FABEC monitoring report: *Some ANSPs are not able to manage the full flight from ToD due to the size/shape of their airspace, which in turn affects their performance for this indicator.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Brussels-EBBR	1.36					0.89					18%				

1. Overview

The scope of RP3 monitoring for Luxembourg comprises the main airport (ELLX), where traffic decreased by 47% in 2020 compared to the previous year.
In accordance with IR (EU) 2019/317 and the traffic volume, additional taxi-out and ASMA times are not monitored at Luxembourg and the environmental performance focuses only on the share of arrivals applying CDO.

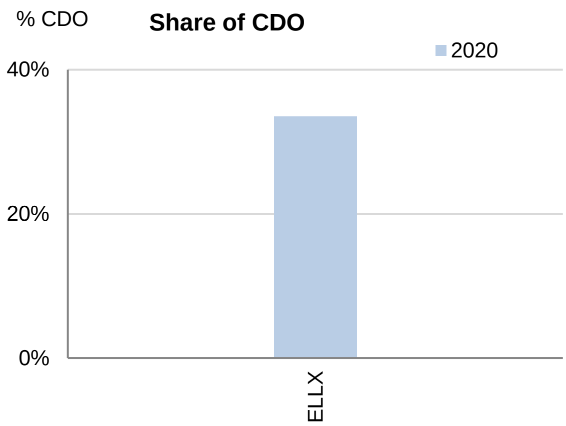
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for Luxembourg.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for Luxembourg.

4. Share of arrivals applying CDO



The share of CDO flights arriving at ELLX in 2020 is 33.5% which is just above the overall RP3 value for 2020 (32.5%).

5. Appendix

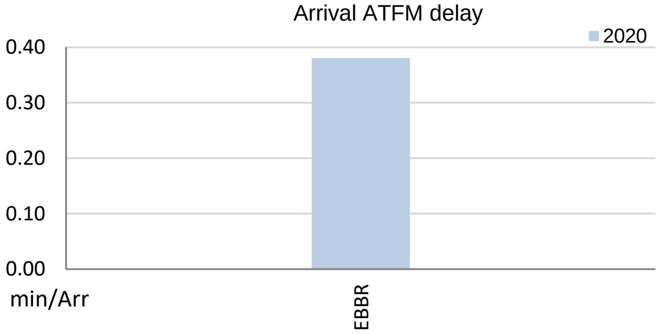
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Luxembourg-ELLX	-					-					34%				

1. Overview

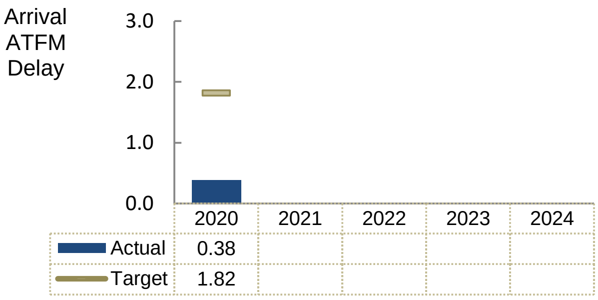
Belgium identifies only Brussels airport as subject to RP3 monitoring.
The Airport Operator Data Flow is fully established and the monitoring of pre-departure delays can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic levels in 2020 decreased by 60% at Brussels airport. This drastic drop in traffic had an impact on the ATFM regulations, with zero arrival ATFM delay since the month of April 2020. All causes pre-departure delay in 2020 was one of the highest in the SES monitored airports.

2. Arrival ATFM Delay



The massive traffic drop due to the COVID-19 pandemic outbreak in Europe as from March 2020 has reduced the 2020 March - December traffic to a very low level.
Traffic at Brussels airport was -73% in the period April to December compared to 2019. All delay occurred in the period January-March (EBBR; 2019: 0.90 min/arr; 2020: 0.38 min/arr)
91% of the arrival delay at Brussels was attributed to Weather.

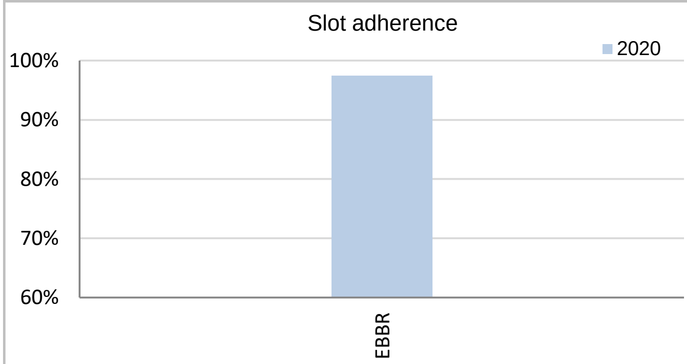
3. Arrival ATFM Delay – National Target and Incentive Scheme



The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Brussels also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Brussels ATFM slot compliance was 97.4%
With regard to the 2.6% of flights that did not adhere, 1.11% was early, 1.47% was late.

5. ATC Pre-departure Delay

The share of unidentified delay reported by Brussels was well above 40% since April 2020, preventing the calculation of this indicator, due to the special traffic composition. Brussels had proper reporting before the pandemic.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Brussels in 2020 was 13.88 min/dep. which is the 4th highest among the RP3 monitored airports.
The highest average delay per flight was observed in the months of April, May and June, exceeding the 20 min/dep.

7. Appendix

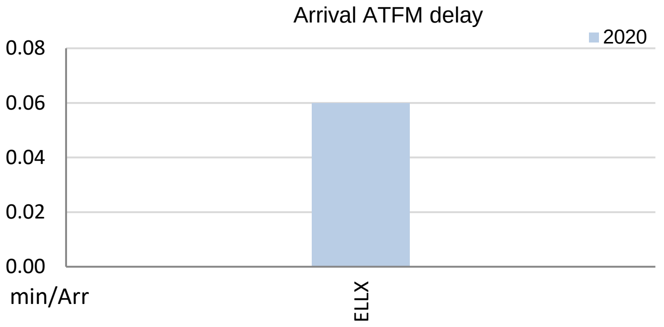
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Brussels-EBBR	0.38					97.4%					n/a					13.88				

1. Overview

The scope of RP3 monitoring for Luxembourg comprises the main airport (ELLX), where traffic decreased by 47% in 2020 compared to the previous year. This traffic reduction had an obvious impact on the ATFM measures, with zero arrival ATFM delays as of April.
In accordance with IR (EU) 2019/317 and the traffic volume, pre-departure delays are not monitored at Luxembourg and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.

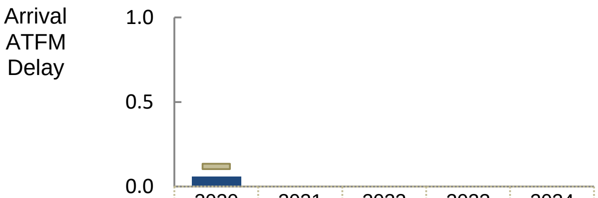
2. Arrival ATFM Delay



The massive traffic drop due to the COVID-19 pandemic outbreak in Europe as from March 2020 (-47% for the whole year for ANA LUX) has reduced the 2020 March - December traffic to a very low level (from -35% in March down to -83% in April).
The average arrival ATFM delay at Luxembourg in 2020 was 0.06 min/arr, drastically lower compared with 1 min/arr in 2019 (-94%).

Delays were only observed in January and February and a small fraction in March, and they were 100% attributed to weather.

3. Arrival ATFM Delay – National Target and Incentive Scheme

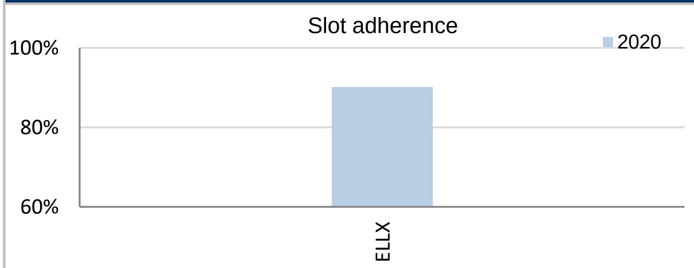


	2020	2021	2022	2023	2024
Actual	0.06				
Target	0.12				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Luxembourg also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Luxembourg's ATFM slot compliance was 90.2%
With regard to the 9.8% of flights that did not adhere, 5.46% was early and 4.34% was late.

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for Luxembourg.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for Luxembourg.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

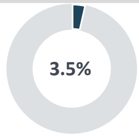
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Luxembourg-ELLX	0.06					90.2%					-					-				

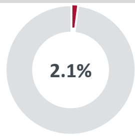
Contextual economic information: en-route air navigation services

FAB:	FABEC
Main ATSP:	skeyes
National currency:	EUR

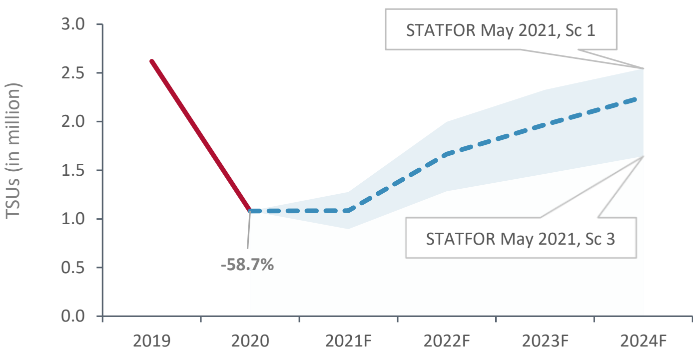
■ Belgium-Luxembourg ECZ share in European ANS actual costs in 2020

■ Belgium-Luxembourg ECZ share in European ANS actual TSUs in 2020

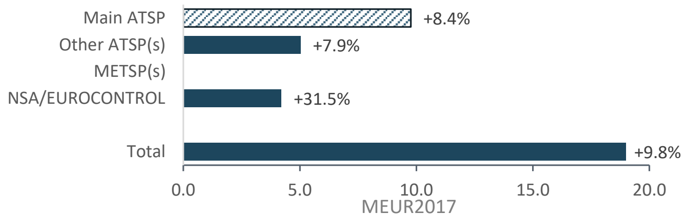




Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	222 969 751	199 494 828	219 574 913	-1.5%	+10.1%
Inflation %	0.6%	1.2%	0.4%	-0.2 p.p.	-0.8 p.p.
Real en-route costs (EUR2017)	215 651 470	193 678 302	212 678 910	-1.4%	+9.8%
Total en-route Service Units (TSUs)	1 073 000	2 619 592	1 080 873	+0.7%	-58.7%
Real en-route unit cost per Service Unit (EUR2017)	**200.98**	**73.93**	**196.77**	**-2.1%**	**+166.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-2.1%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+0.7%) actual TSUs and slightly lower (-1.4%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-58.7%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Belgium-Luxembourg ECZ rose substantially (+166.1% in real terms) mainly due to the exceptional -58.7% traffic reduction. In the meantime, en-route costs increased (+9.8%) in real terms.

The higher en-route costs at CZ level are a combination of the following changes observed for the different entities: skeyes - the main ATSP (+8.4%), the other ATSPs operating in the CZ (+7.9%) and the NSA/EUROCONTROL (+31.5%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of skeyes en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	91 571 932	84 473 559	90 291 808	-1.4%	+6.9%
Other operating costs	21 061 635	20 495 293	19 586 191	-7.0%	-4.4%
Depreciation	10 592 104	8 179 749	10 023 843	-5.4%	+22.5%
Cost of capital	6 052 900	3 379 315	6 390 260	+5.6%	+89.1%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total skeyes en-route costs	**129 278 572**	**116 527 916**	**126 292 102**	**-2.3%**	**+8.4%**

Analysis at main ATSP level

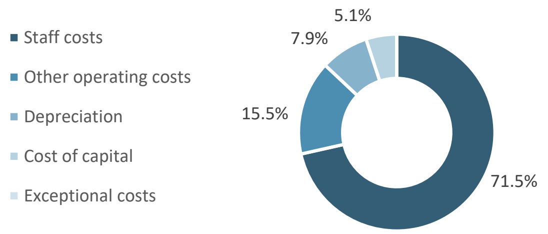
In 2020, skeyes actual en-route costs were lower (-2.3%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, skeyes actual 2020 en-route costs are higher (+8.4%, or +9.8 MEUR2017) compared to those reported in 2019. This results from the combination of:

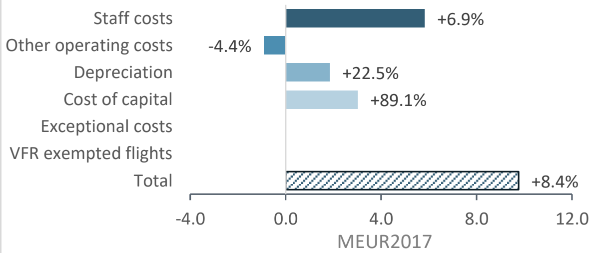
- higher staff costs (+6.9%, or +5.8 MEUR2017);
- lower other operating costs (-4.4%, or -0.9 MEUR2017);
- significantly higher depreciation costs (+22.5%, or +1.8 MEUR2017);
- significantly higher cost of capital (+89.1%, or +3.0 MEUR2017).

Skeyes implemented important measures that affected the level of non-staff operating costs while preserving the staff health and continuity of services. In addition, Belgium indicates that overall staff costs were lower in 2020, which was compensated by the increase reflecting the change in the allocation of approach costs between en-route and terminal services. According to the information provided by Belgium, this change resulted in a shift of some 14.8 MEUR from terminal (including costs of airports not included in the performance plan) to en-route.

Skeyes actual 2020 en-route costs by nature

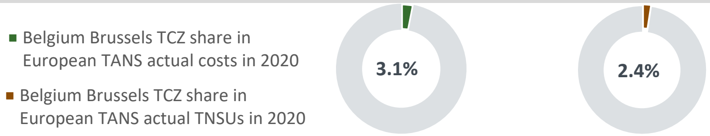


Actual costs variation by nature between 2019 and 2020

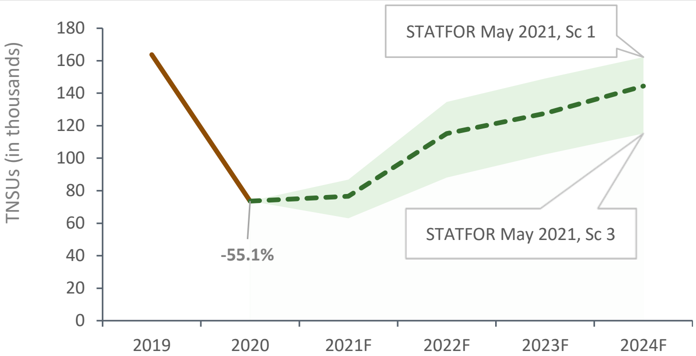


Contextual economic information: terminal air navigation services

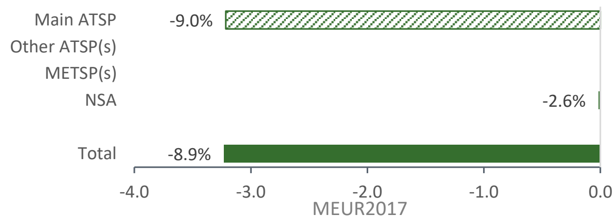
Main ATSP:	skeyes
National currency:	EUR
Number of airports in TCZ:	1



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	37 583 619	34 328 430	-8.7%
Inflation %	1.2%	0.4%	-0.8 p.p.
Real terminal costs (EUR2017)	36 439 699	33 208 502	-8.9%
Total Terminal Navigation Service Units	163 766	73 587	-55.1%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**222.51**	**451.28**	**+102.8%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Belgium Brussels TCZ comprises only Brussels airport.

Between 2019 and 2020, the terminal unit costs of Belgium Brussels TCZ rose substantially (+102.8% in real terms) mainly due to the exceptional -55.1% traffic reduction. In the meantime, terminal costs decreased (-8.9%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-55.1%) would not be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: skeyes - the main ATSP (-9.0%) and the NSA (-2.6%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of skeyes Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	26 119 210	22 635 968	-13.3%
Other operating costs	6 308 505	5 776 243	-8.4%
Depreciation	2 431 251	3 009 625	+23.8%
Cost of capital	958 369	1 180 274	+23.2%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total skeyes terminal costs in TCZ	**35 817 335**	**32 602 110**	**-9.0%**

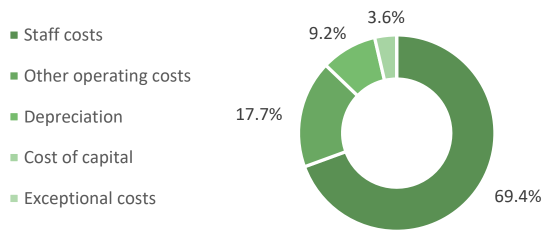
Analysis at main ATSP level

As indicated in the text box above, skeyes actual 2020 terminal costs in TCZ are lower (-9.0%, or -3.2 MEUR2017) than those reported in 2019. This results from the combination of:

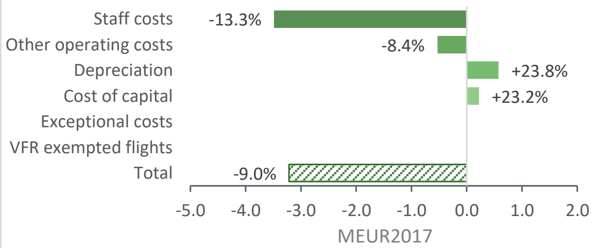
- significantly lower staff costs (-13.3%, or -3.5 MEUR2017);
- lower other operating costs (-8.4%, or -0.5 MEUR2017);
- significantly higher depreciation costs (+23.8%, or +0.6 MEUR2017);
- significantly higher cost of capital (+23.2%, or +0.2 MEUR2017).

Skeyes implemented important measures that affected the level of non-staff operating costs while preserving the staff health and continuity of services. In addition, Belgium indicates that overall staff costs were lower in 2020. In addition, the decrease in staff costs in terminal charging zone was reinforced by the change in the allocation of approach costs between en-route and terminal services as detailed in the en-route analysis.

Skeyes actual 2020 terminal costs by nature in TCZ

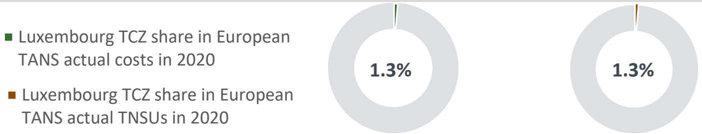


Actual costs variation by nature between 2019 and 2020

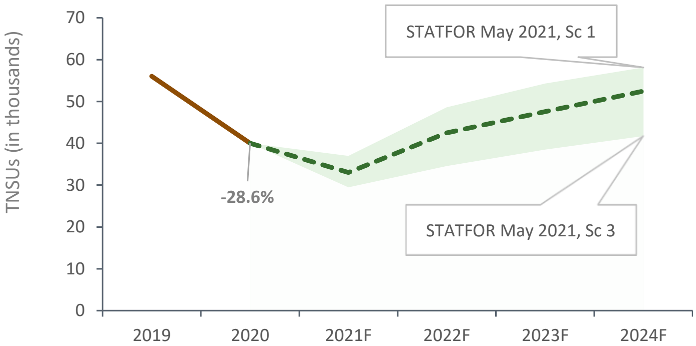


Contextual economic information: terminal air navigation services

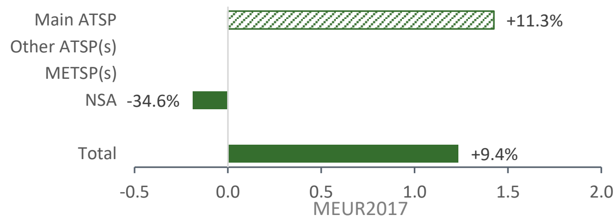
Main ATSP:	ANA Luxembourg
National currency:	EUR
Number of airports in TCZ:	1



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	13 598 057	14 886 778	+9.5%
Inflation %	1.6%	0.0%	-1.6 p.p.
Real terminal costs (EUR2017)	13 190 915	14 426 430	+9.4%
Total Terminal Navigation Service Units	56 026	40 007	-28.6%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**235.44**	**360.60**	**+53.2%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Luxembourg TCZ comprises only Luxembourg airport.

Between 2019 and 2020, the terminal unit costs of Luxembourg TCZ rose substantially (+53.2% in real terms) mainly due to the exceptional -28.6% traffic reduction. In the meantime, terminal costs increased (+9.4%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-28.6%) would not be recovered by 2024.

The higher terminal costs at TCZ level are a combination of the following changes observed for the different entities: ANA Luxembourg - the main ATSP (+11.3%) and the NSA (-34.6%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of ANA Luxembourg Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	7 524 396	9 021 438	+19.9%
Other operating costs	3 685 463	3 653 326	-0.9%
Depreciation	957 518	1 196 419	+25.0%
Cost of capital	477 175	198 109	-58.5%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total ANA Luxembourg terminal costs in TCZ	**12 644 552**	**14 069 291**	**+11.3%**

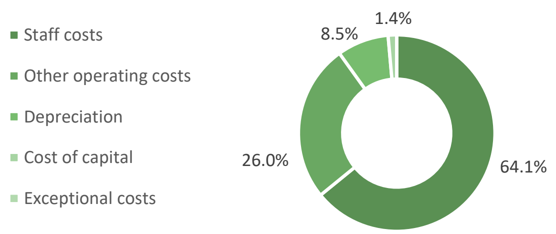
Analysis at main ATSP level

As indicated in the text box above, ANA Luxembourg actual 2020 terminal costs in TCZ are significantly higher (+11.3%, or +1.4 MEUR2017) than reported in 2019. This results from the combination of:

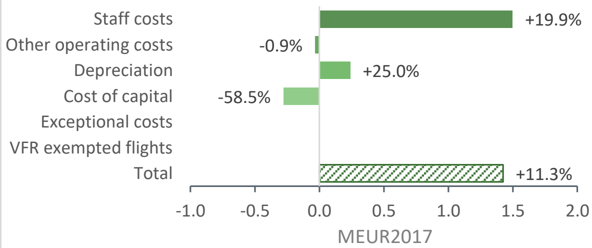
- significantly higher staff costs (+19.9%, or +1.5 MEUR2017);
- slightly lower other operating costs (-0.9%, or 0.03 MEUR2017);
- significantly higher depreciation costs (+25.0%, or +0.2 MEUR2017);
- significantly lower cost of capital (-58.5%, or -0.3 MEUR2017).

Extraordinary measures implemented by ANA Luxembourg included reduction of external services and prioritisation of projects.

ANA Luxembourg actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	193 678 302	212 678 910	+9.8%
Real terminal costs (EUR2017)	49 630 613	47 634 933	-4.0%
Real gate-to-gate costs (EUR2017)	243 308 915	260 313 842	+7.0%
En-route share in gate-to-gate costs (%)	**79.6%**	**81.7%**	**+2.1 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Belgium-Luxembourg increased (+7.0%, or +17.0 MEUR2017) in real terms. This is a combination of an increase (+9.8%, or +19.0 MEUR2017) in en-route and a decrease (-4.0%, or -2.0 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (81.7%) increased (+2.1 p.p.) compared to the figure reported in 2019 (79.6%).

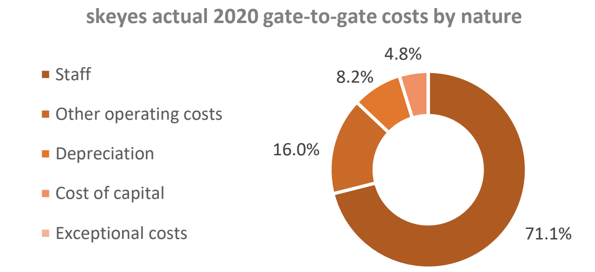
Breakdown of skeyes gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	110 592 769	112 927 776	+2.1%
Other operating costs	26 803 797	25 362 433	-5.4%
Depreciation	10 611 000	13 033 469	+22.8%
Cost of capital	4 337 684	7 570 534	+74.5%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total skeyes gate-to-gate costs	**152 345 251**	**158 894 212**	**+4.3%**

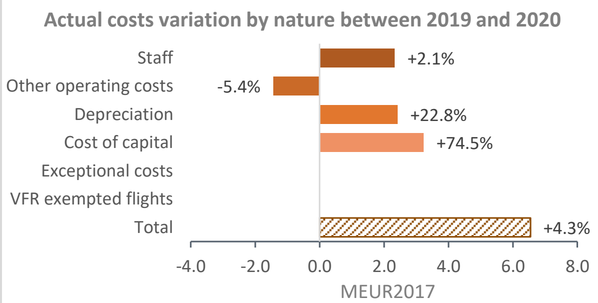
Analysis at main ATSP level

Skeyes actual 2020 gate-to-gate costs are higher (+4.3%, or +6.5 MEUR2017) than those reported in 2019. This results from the combination of:

- slightly higher staff costs (+2.1%, or +2.3 MEUR2017);
- lower other operating costs (-5.4%, or -1.4 MEUR2017);
- significantly higher depreciation costs (+22.8%, or +2.4 MEUR2017);
- significantly higher cost of capital (+74.5%, or +3.2 MEUR2017).

Details on the drivers behind the changes observed above are provided in the respective analyses of skeyes at en-route and terminal charging zone level.





Notes on data and information submitted by Belgium-Luxembourg

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Annual Monitoring Report 2020
Local level view
France

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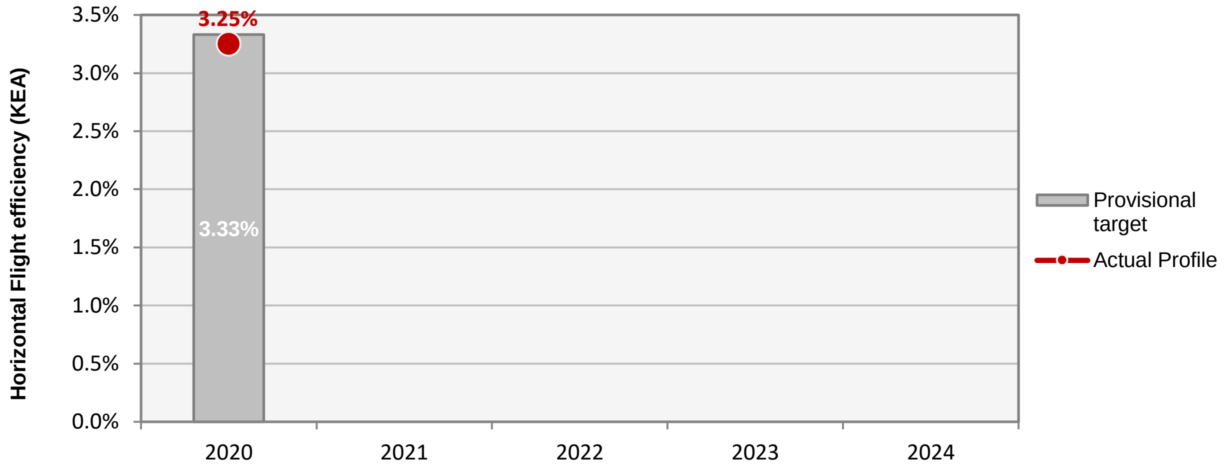
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
DSNA	94	B	C	D	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

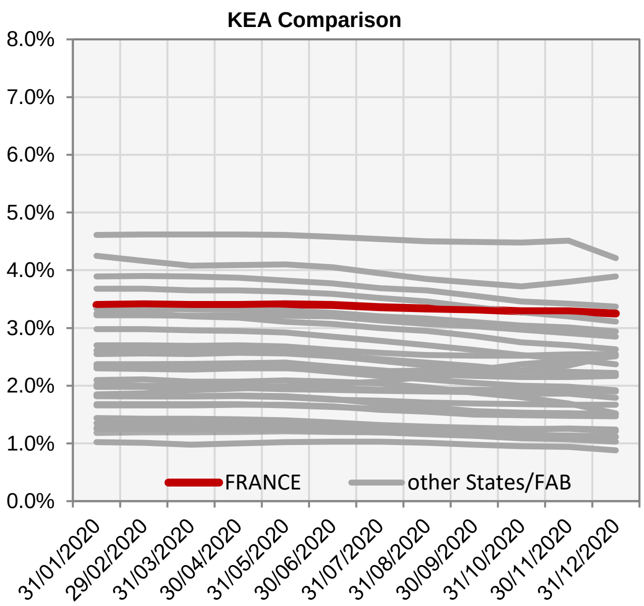
Four out of five EoSM components of the ANSP meet already the 2024 target level. Only the component "Safety Culture" is below 2024 target level. Improvements in this area are still expected during RP3 to achieve 2024 targets.

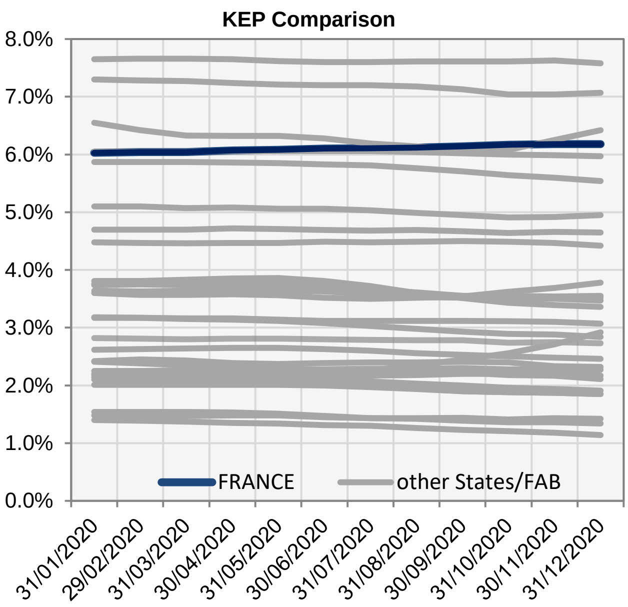
KEA	2020	2021	2022	2023	2024
Provisional target	3.33%				
Actual performance	3.25%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	3.40%	3.41%	3.40%	3.40%	3.41%	3.40%	3.36%	3.34%	3.32%	3.29%	3.29%	3.25%
KEP	6.03%	6.04%	6.04%	6.07%	6.08%	6.10%	6.11%	6.12%	6.14%	6.17%	6.18%	6.18%
KES	5.83%	5.83%	5.83%	5.86%	5.86%	5.87%	5.87%	5.88%	5.89%	5.90%	5.90%	5.90%



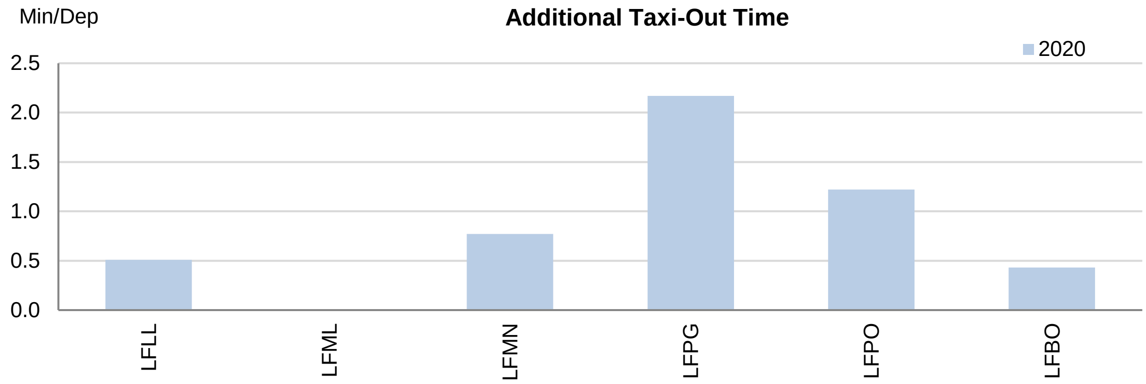


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

For France, the scope of the RP3 monitoring comprises a total of 58 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only 6 of those airports must be monitored for additional taxi-out and ASMA times. 52 of these 58 airports are grouped into a basket ("LFXX") for monitoring and target setting purposes.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is established for the 6 airports required. Nevertheless, the data quality in the case for Marseille (LFML) does not allow for the calculation of taxi-out times.
The traffic at the ensemble of these 58 airports decreased in 2020 by 53% compared to 2019, which clearly impacted the performance in terms of additional taxi-out and ASMA times, with drastic reductions since April.
Despite the low traffic numbers, the share of CDO flights stayed rather low in 2020.

2. Additional Taxi-Out Time

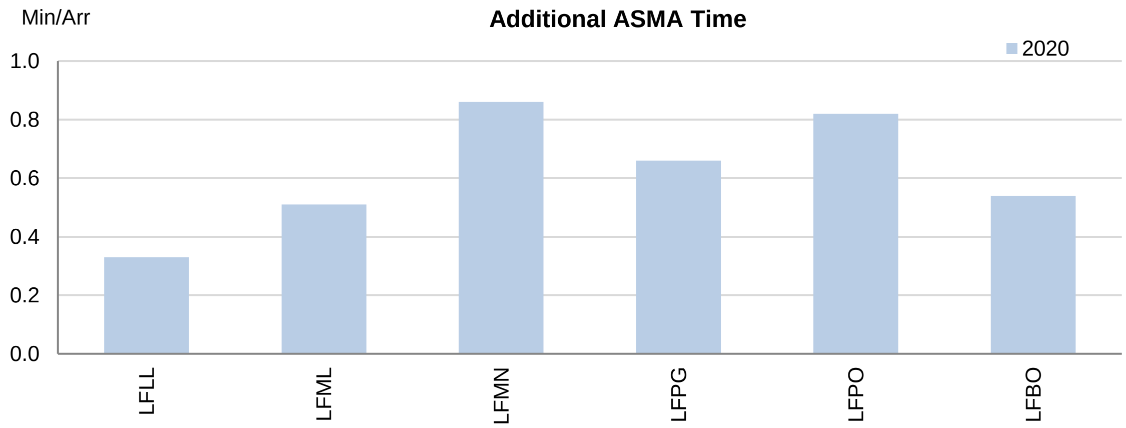


Additional taxi-out times in 2020 decreased between 38% and 55% with respect to 2019 at the French airports where it can be analysed, due to the drastic reduction in traffic (between -53% and -62%).

In particular at Charles de Gaulle (LFPG; 2019: 3.77 min/dep; 2020: 2.17 min/dep.) additional taxi-out times normally range around 3.5 min/dep. in previous years. In 2020 this indicator started the year averaging 4 min/dep, probably due to de-icing procedures. However as of April these times drastically decreased and kept well below 2 min for the rest of the year.

The end of the year showed a steady increase of these additional taxi-out times, probably associated to the holiday traffic and de-icing procedures.

3. Additional ASMA Time

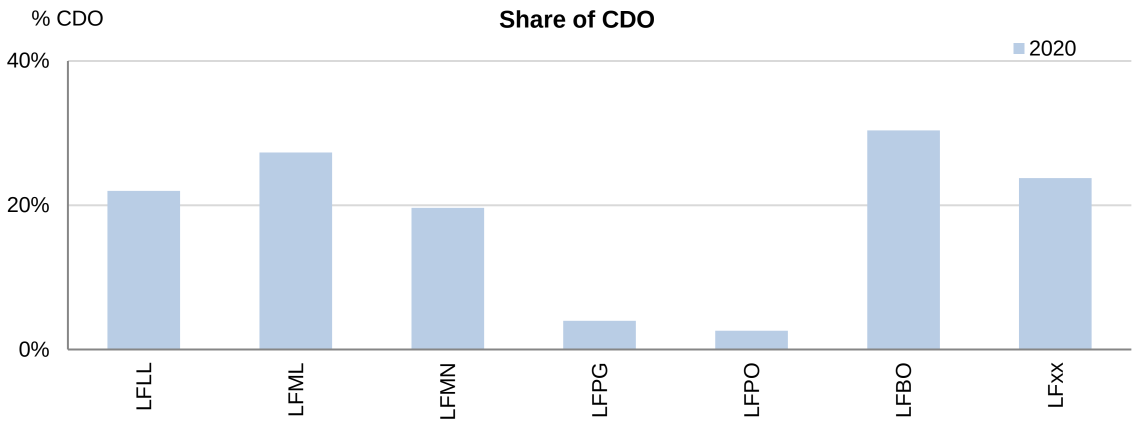


Additional times in the terminal area at French airports were in general very good and well below the RP2 average in 2019. In 2020 these times decreased in different degrees depending on the airport, with the lower reductions observed at the biggest airports Charles de Gaulle (LFPG; -25% with respect to 2019) and Paris Orly (LFPO; -21% with respect to 2019).

Nice (LFMN), despite a 51% reduction with respect to the previous year, showed once more the highest additional ASMA times at these airports (LFMN; 2020: 0.78 min/arr.)

Like in previous years, Charles de Gaulle was once again the best performing airport above 200000 movements with the lowest additional ASMA times (LFPG; 2020: 0.66 min/arr.)

4. Share of arrivals applying CDO



For 10 out of the 58 airports, the share of CDO flights was above the RP3 overall value in 2020 (32.5%).
The Paris airports have a remarkably low share of CDO flights, despite the low traffic numbers. Paris-Le Bourget (LFPB) has the lowest share of CDO flights of all airports monitored during 2020 (0.9%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

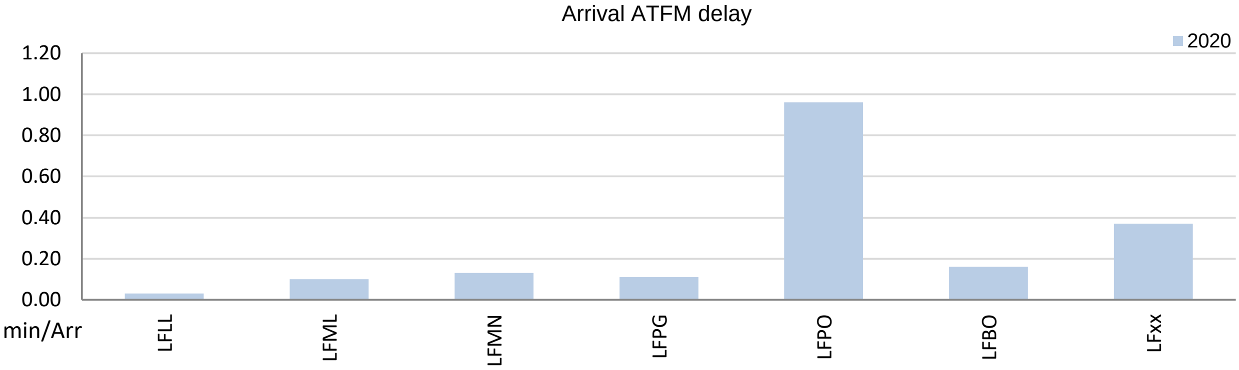
Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Lyon-Saint-Exupéry-LFLL	0.51					0.33					22%				
Marseille-Provence-LFML	n/a					0.51					27%				
Nice-Côte d'Azur-LFMN	0.77					0.86					20%				
Paris-Charles-de-Gaulle-LFPG	2.17					0.66					4%				
Paris-Orly-LFPO	1.22					0.82					3%				
Toulouse-Blagnac-LFBO	0.43					0.54					30%				
Agen-La Garenne-LFBA	-					-					20%				
Ajaccio-Napoléon-Bonaparte-LFKJ	-					-					39%				
Albert-Bray-LFAQ	-					-					29%				
Annecy-Meythet-LFLP	-					-					16%				
Avignon-Caumont-LFMV	-					-					14%				
Bâle-Mulhouse-LFSB	-					-					18%				
Bastia-Poretta-LFKB	-					-					40%				
Beauvais-Tillé-LFOB	-					-					8%				
Bergerac-Roumanière-LFBE	-					-					14%				
Béziers-Vias-LFMU	-					-					27%				
Biarritz-Bayonne-Anglet-LFBZ	-					-					26%				
Bordeaux-Mérignac-LFBD	-					-					32%				
Brest-Bretagne-LFRB	-					-					33%				
Brive-Souillac-LFSL	-					-					15%				
Caen-Carpiquet-LFRK	-					-					11%				
Calvi-Sainte-Catherine-LFKC	-					-					37%				
Cannes-Mandelieu-LFMD	-					-					13%				
Carcassonne-Salvaza-LFMK	-					-					19%				
Châlons-Vatry-LFOK	-					-					27%				
Chambéry-Aix-les-Bains-LFLB	-					-					9%				
Châteauroux-Déols-LFLX	-					-					12%				
Clermont-Ferrand-Auvergne-LFLC	-					-					22%				
Deauville-Normandie-LFRG	-					-					11%				
Dinard-Pleurtuit-Saint-Malo-LFRD	-					-					18%				
Dôle-Tavaux-LFGJ	-					-					13%				
Figari-Sud Corse-LFKF	-					-					35%				

Grenoble-Isère-LFLS	-					-				18%				
Hyères-Le Palyvestre-LFTH	-					-				30%				
Istres-Le Tubé-LFMI	-					-				31%				
La Rochelle-Ile de Ré-LFBH	-					-				26%				
Lille-Lesquin-LFQQ	-					-				29%				
Limoges-Bellegarde-LFBL	-					-				30%				
Lorient-Lann Bihoué-LFRH	-					-				30%				
Lyon-Bron-LFLY	-					-				10%				
Metz-Nancy-Lorraine-LFJL	-					-				9%				
Montpellier-Méditerranée-LFMT	-					-				33%				
Nantes-Atlantique-LFRS	-					-				27%				
Nîmes-Garons-LFTW	-					-				18%				
Paris-Le Bourget-LFPB	-					-				1%				
Pau-Pyrénées-LFBP	-					-				22%				
Perpignan-Rivesaltes-LFMP	-					-				43%				
Poitiers-Biard-LFBI	-					-				16%				
Quimper-Pluguffan-LFRQ	-					-				28%				
Rennes-Saint-Jacques-LFRN	-					-				53%				
Rodez-Marcillac-LFCR	-					-				17%				
Rouen-LFOP	-					-				29%				
Saint-Etienne-Bouthéon-LFMH	-					-				11%				
Saint-Nazaire-Montoir-LFRZ	-					-				19%				
Strasbourg-Entzheim-LFST	-					-				17%				
Tarbes-Lourdes Pyrénées-LFBT	-					-				63%				
Tours-Val de Loire-LFOT	-					-				48%				
Toussus-le-Noble-LFPN	-					-				5%				

1. Overview

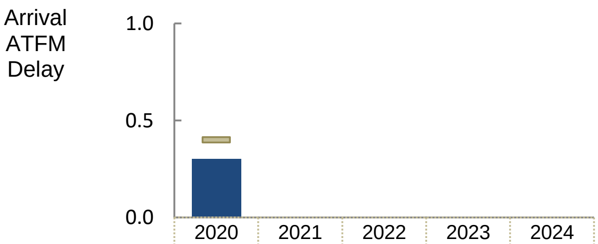
For France, the scope of the RP3 monitoring comprises a total of 58 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only 6 of those airports must be monitored for pre-departure delays. 52 of these 58 airports are grouped into a basket ("LFXX") for monitoring and target setting purposes.
The Airport Operator Data Flow, necessary for the monitoring of the pre-departure delays, is established for the 6 airports required. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at 5 of those airports, with more than 60% of the reported delay not allocated to any cause.
The traffic at the ensemble of these 58 airports decreased in 2020 by 53% compared to 2019, which impacted the performance with almost no arrival ATFM delays as of the month of April. Nevertheless there are a couple of airports where delays in the rest of the year were also quite important, and in general terms the performance in terms of arrival ATFM delays in France improved less compared to other states (-28% vs 2019).
A few French airports had the lowest slot adherence among the SES monitored airports, and Marseille (LFML) did not even reach the 80% threshold. According to FABEC monitoring report, this low slot adherence was due to a technical issue that should be solved for 2021.

2. Arrival ATFM Delay



The massive traffic drop due to the COVID-19 pandemic outbreak in Europe as from March 2020 (-53% for the whole 2020 compared to 2019 for the 58 French airports included in the Performance Plan) has reduced the 2020 traffic to a very low level (-64% in the April-December period). In line with the traffic reduction, arrival ATFM delays at most of these airports virtually disappeared as of April, with a few exceptions like Cannes (LFMD) or Le Bourget (LFPB). The national average arrival ATFM delay in 2020 was 0.30 min/arr, compared with 0.42 min/arr in 2019.
The biggest contributor to the delays in the year was Paris Orly, due mainly to Industrial Action (64% of the total delays in 2020 at LFPO) followed by Weather (22%).
After Orly, Cannes-Mandelieu was the airport that generated more minutes of arrival ATFM delay, mostly in July and August due to ATC Capacity (65%) and Aerodrome Capacity (30%) regulations. These delays made Cannes the airport with the highest average arrival ATFM delay in the SES area (LFMD; 2020: 2.97 min/arr.)
Paris Charles de Gaulle concentrated most of the delays in the first two months of the year, and 88% of the total delays were associated with Weather.
Bordeaux-Merignac was the 4th contributor to the total delays at these airports in 2020, mostly due to Industrial Action regulations in the first trimester generating 95% of the arrival delays.
And another of the smaller airports in terms of traffic, Le Bourget, was the 5th contributor to the total French arrival ATFM delays due to several reasons: ATC Staffing (36%), Industrial Action (32%) and Equipment (18%). These delays were generated not only in the first trimester, but also in the period from June to October.

3. Arrival ATFM Delay – National Target and Incentive Scheme

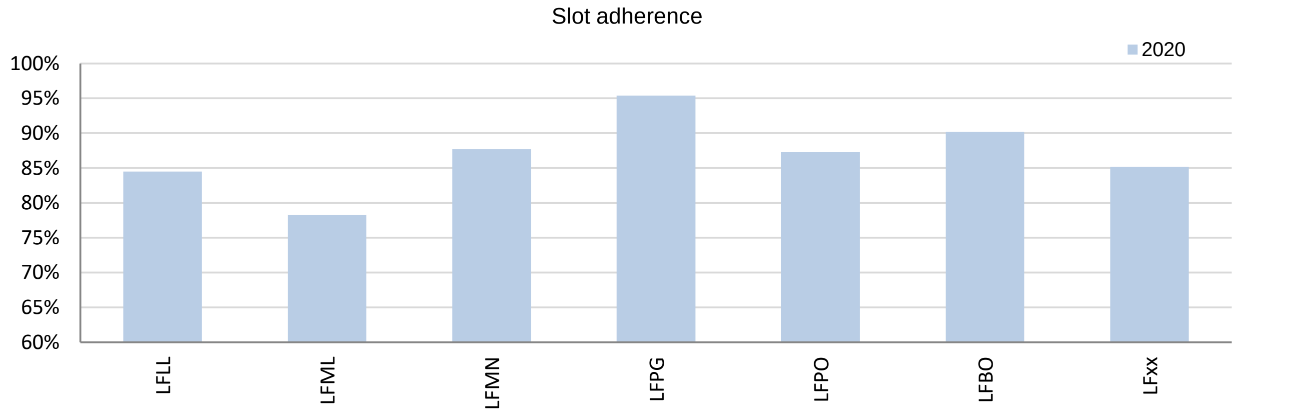


	2020	2021	2022	2023	2024
Actual	0.30				
Target	0.40				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



Main national individual airports involved were above the 80% threshold of compliance except for LFML which was just under the threshold (78,3%).
The national average was 88.1%. With regard to the 11.9% of flights that did not adhere, 7.4% was early and 4.5% was late.

According to FABEC monitoring report:
DSNA identified that one reason generating this lack of measured adherence was wrong information sent to NMOC. Indeed, except in the two main Paris airports, the signal for activating the flight plan in the current FDPS system of DSNA (CAUTRA) is also used as the first system activation message (FSA) signal sent to the NMOC. However, this takes place at a time after off-block time (OBT), but well before the actual take-off, while it is interpreted by NMOC as Take-Off Time (TOT). Hence, NMOC detects a large percentage of regulated flights as taking off in advance of the tolerance window, although the actual take-off time is later and actually generally within the STW.

This appears in particular for Marseille airport. This is now acknowledged by DSNA as a clear deviation on many airports where the taxiing time is significant. This default has however been corrected in Paris-Charles-de-Gaulle and Paris-Orly through a specific local system that allows sending the NMOC a correct take-off time (TOT).

However, an in depth analysis of past results in Marseille has shown that the root causes were less operational in terms of ATC management but due to problems in calculating the correct CTOT; so the issue was more about the correct calibration of the CTOT calculation than about the accuracy of the detection of actual take-offs (as a reminder, either the ATS unit has an automatic take-off detection system and the "FSA" (First System Activation) message is sent to the NM as close as possible to this event, or the NM itself recalibrates the take-off time using the CPRs).

The LFML Operations Department has modified in coordination with the NM the parameters of the LFML taxi time thus the CTOT calculation has been improved and the CTOT compliance measurement has been more adequate; as a result, we can observe an increase in the CTOT compliance rate which brings LFML back to a good level: figures year up to date for 2021 to date (end of April 2021) show a compliance of 86.41% (data corroborated by the PRU).

DSNA is still preparing a device to correct the time sent to the NMOC on the other main airports. Since on smaller airports, the taxiing time is short, the deviation has little impact.

5. ATC Pre-departure Delay

The share of unidentified delay reported by the 6 French airports subject to this monitoring in 2020, except by Nice, was above 40% for more than 2 months in the year, preventing the calculation of this indicator. This is partially due to the special traffic composition for most months in 2020. Lyon, Paris Orly and Toulouse normally had proper reporting before the pandemic and only after April 2020 the share of unidentified delay exceeded the required minimum for the computation.
On the other hand the insufficient data quality provided by Marseille and Charles de Gaulle is a long standing issue prior to April 2020.
Nice is the only airport where this indicator can be calculated. The performance has slightly improved with respect to the previous year (LFMN; 2019: 0.31 min/dep.; 2020: 0.21 min/dep.)

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at French airports in 2020 was between 7.46 min/dep for Nice (LFMN) and 13.41 min/dep. for Paris Orly (LFPO) which is the 5th highest among the RP3 monitored airports.
The higher delays per flight were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances. In December there was also a general increase at most of these airports.

7. Appendix

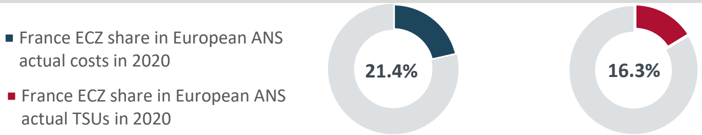
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Lyon-Saint-Exupéry-LFLL	0.03					84.5%					n/a					11.98				
Marseille-Provence-LFML	0.1					78.3%					n/a					9.57				

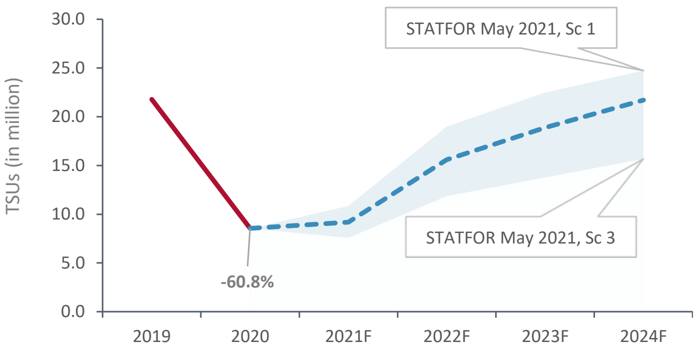
Nice-Côte d'Azur-LFMN	0.13					87.7%					0.21					7.46				
Paris-Charles-de-Gaulle-LFPG	0.11					95.4%					n/a					12.85				
Paris-Orly-LFPO	0.96					87.3%					n/a					13.41				
Toulouse-Blagnac-LFBO	0.16					90.2%					n/a					8.89				
Agen-La Garenne-LFBA	0					79.2%					-					-				
Ajaccio-Napoléon-Bonaparte-LFKJ	0					76.4%					-					-				
Albert-Bray-LFAQ	0					44.0%					-					-				
Annecy-Meythet-LFLP	0.16					74.9%					-					-				
Avignon-Caumont-LFMV	0.23					78.7%					-					-				
Bâle-Mulhouse-LFSB	0.41					87.4%					-					-				
Bastia-Poretta-LFKB	0					80.7%					-					-				
Beauvais-Tillé-LFOB	0.05					72.6%					-					-				
Bergerac-Roumanière-LFBE	0					81.8%					-					-				
Béziers-Vias-LFMU	0					68.5%					-					-				
Biarritz-Bayonne-Anglet-LFBZ	0.05					88.8%					-					-				
Bordeaux-Mérignac-LFBD	0.77					91.5%					-					-				
Brest-Bretagne-LFRB	0					97.0%					-					-				
Brive-Souillac-LFSL	0					95.7%					-					-				
Caen-Carpiquet-LFRK	0					94.2%					-					-				
Calvi-Sainte-Catherine-LFKC	0.07					82.1%					-					-				
Cannes-Mandelieu-LFMD	2.97					93.4%					-					-				
Carcassonne-Salvaza-LFMK	0					81.8%					-					-				
Châlons-Vatry-LFOK	0.5					78.0%					-					-				
Chambéry-Aix-les-Bains-LFLB	1.67					89.3%					-					-				
Châteauroux-Déols-LFLX	0					86.7%					-					-				
Clermont-Ferrand-Auvergne-LFLC	0					81.5%					-					-				
Deauville-Normandie-LFRG	0					90.0%					-					-				
Dinard-Pleurtuit-Saint-Malo-LFRD	0					61.3%					-					-				
Dôle-Tavaux-LFGJ	0					59.4%					-					-				
Figari-Sud Corse-LFKF	0.18					80.3%					-					-				
Grenoble-Isère-LFLS	0.5					93.6%					-					-				
Hyères-Le Palyvestre-LFTH	0.06					81.1%					-					-				
Istres-Le Tubé-LFMI	0					66.7%					-					-				
La Rochelle-Ile de Ré-LFBH	0					81.3%					-					-				
Lille-Lesquin-LFQQ	0.33					86.1%					-					-				
Limoges-Bellegarde-LFBL	0.19					93.4%					-					-				
Lorient-Lann Bihoué-LFRH	0					88.8%					-					-				
Lyon-Bron-LFLY	0.01					89.5%					-					-				
Metz-Nancy-Lorraine-LFJL	0					82.5%					-					-				
Montpellier-Méditerranée-LFMT	0.01					75.1%					-					-				
Nantes-Atlantique-LFRS	0.24					91.6%					-					-				
Nîmes-Garons-LFTW	0					83.4%					-					-				
Paris-Le Bourget-LFPB	0.6					94.2%					-					-				
Pau-Pyrénées-LFBP	1.45					85.9%					-					-				
Perpignan-Rivesaltes-LFMP	0.07					77.4%					-					-				
Poitiers-Biard-LFBI	0					87.8%					-					-				
Quimper-Pluguffan-LFRQ	0					84.7%					-					-				
Rennes-Saint-Jacques-LFRN	0					78.7%					-					-				
Rodez-Marcillac-LFCR	0					88.5%					-					-				
Rouen-LFOP	0.13					74.2%					-					-				
Saint-Etienne-Bouthéon-LFMH	0					79.6%					-					-				
Saint-Nazaire-Montoir-LFRZ	0					97.2%					-					-				
Strasbourg-Entzheim-LFST	0.03					79.6%					-					-				
Tarbes-Lourdes Pyrénées-LFBT	0					90.5%					-					-				
Tours-Val de Loire-LFOT	0					50.0%					-					-				
Toussus-le-Noble-LFPN	0.97					77.7%					-					-				

Contextual economic information: en-route air navigation services

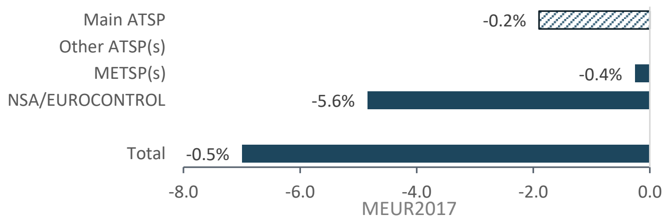
FAB:	FABEC
Main ATSP:	DSNA
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	1 337 500 061	1 332 578 058	1 331 065 667	-0.5%	-0.1%
Inflation %	0.5%	1.3%	0.5%	0.0 p.p.	-0.8 p.p.
Real en-route costs (EUR2017)	1 297 860 821	1 297 829 674	1 290 838 451	-0.5%	-0.5%
Total en-route Service Units (TSUs)	8 501 000	21 782 108	8 547 246	+0.5%	-60.8%
Real en-route unit cost per Service Unit (EUR2017)	**152.67**	**59.58**	**151.02**	**-1.1%**	**+153.5%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were slightly lower (-1.1%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+0.5%) actual TSUs and mostly stable (-0.5%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-60.8%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of France ECZ rose substantially (+153.5% in real terms) mainly due to the exceptional -60.8% traffic reduction. In the meantime, en-route costs remained fairly constant (-0.5%) in real terms.

The fairly constant en-route costs at CZ level are a combination of the following changes observed for the different entities: DSNA - the main ATSP (-0.2%), the MET service provider (-0.4%) and the NSA/EUROCONTROL (-5.6%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of DSNA en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	690 727 130	686 957 363	681 142 404	-1.4%	-0.8%
Other operating costs	280 904 765	282 226 073	293 980 640	+4.7%	+4.2%
Depreciation	145 205 644	141 417 464	132 118 901	-9.0%	-6.6%
Cost of capital	42 100 857	42 053 538	43 221 033	+2.7%	+2.8%
Exceptional costs	0	0	0		
VFR exempted flights	-7 136 162	-7 261 189	-6 970 238	-2.3%	-4.0%
Total DSNA en-route costs	**1 151 802 234**	**1 145 393 248**	**1 143 492 740**	**-0.7%**	**-0.2%**

Analysis at main ATSP level

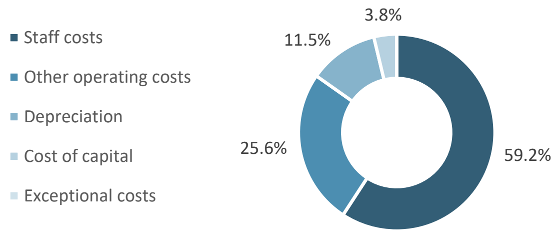
In 2020, DSNA actual en-route costs were slightly lower (-0.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, DSNA actual 2020 en-route costs are mostly in line (-0.2%, or -1.9 MEUR2017) with those reported in 2019. This results from the combination of:

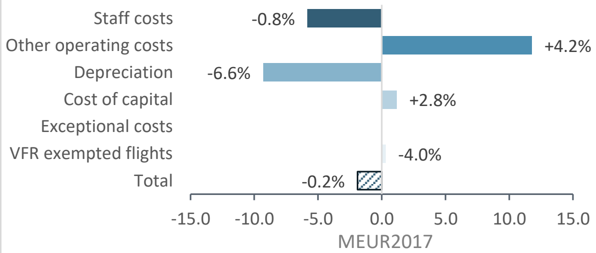
- slightly lower staff costs (-0.8%, or -5.8 MEUR2017);
- higher other operating costs (+4.2%, or +11.8 MEUR2017);
- lower depreciation costs (-6.6%, or -9.3 MEUR2017);
- higher cost of capital (+2.8%, or +1.2 MEUR2017);
- lower deduction for VFR exempted flights (-4.0%).

DSNA implemented measures that affected recruitment, salaries, non-essential operating costs, capex and the cost of capital. On the other hand, France indicates in the 2020 monitoring report that investments providing capacity, environmental benefits and enabling regulatory compliance have been secured and prioritized.

DSNA actual 2020 en-route costs by nature



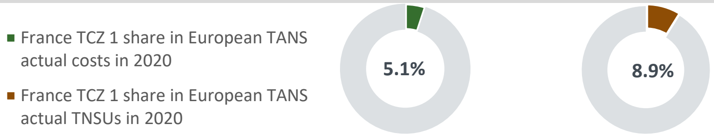
Actual costs variation by nature between 2019 and 2020



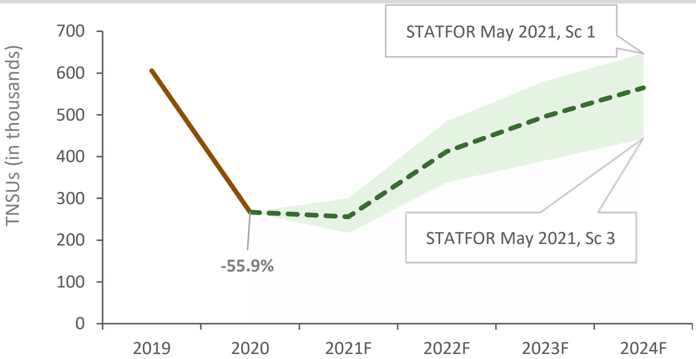
FRANCE: Terminal Charging Zone 1 — COST-EFFICIENCY

Contextual economic information: terminal air navigation services

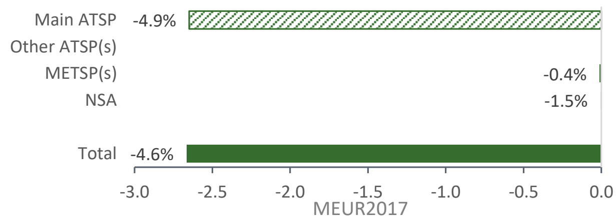
Main ATSP:	DSNA
National currency:	EUR
Number of airports in TCZ:	2



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	59 137 558	56 623 602	-4.3%
Inflation %	1.3%	0.5%	-0.8 p.p.
Real terminal costs (EUR2017)	57 630 256	54 964 503	-4.6%
Total Terminal Navigation Service Units	605 514	267 088	-55.9%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**95.18**	**205.79**	**+116.2%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

France TCZ 1 comprises 2 airports.

Between 2019 and 2020, the terminal unit costs of France TCZ 1 rose substantially (+116.2% in real terms) mainly due to the exceptional -55.9% traffic reduction. In the meantime, terminal costs decreased (-4.6%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-55.9%) would not be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: DSNA - the main ATSP (-4.9%), the MET service provider (-0.4%) and the NSA (-1.5%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of DSNA Terminal ANS costs in TCZ 1 (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	26 574 058	25 014 189	-5.9%
Other operating costs	14 874 781	14 529 178	-2.3%
Depreciation	9 526 548	9 101 955	-4.5%
Cost of capital	3 116 200	2 797 371	-10.2%
Exceptional costs	0	0	
VFR exempted flights	-5 834	-5 975	+2.4%
Total DSNA terminal costs in TCZ 1	**54 085 753**	**51 436 718**	**-4.9%**

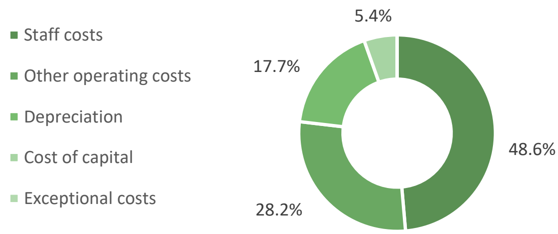
Analysis at main ATSP level

As indicated in the text box above, DSNA actual 2020 terminal costs in TCZ 1 are lower (-4.9%, or -2.6 MEUR2017) than those reported in 2019. This results from the combination of:

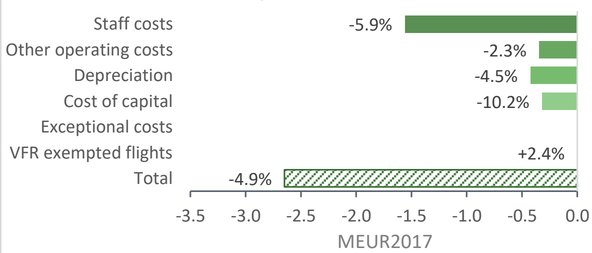
- lower staff costs (-5.9%, or -1.6 MEUR2017);
- lower other operating costs (-2.3%, or -0.3 MEUR2017);
- lower depreciation costs (-4.5%, or -0.4 MEUR2017);
- significantly lower cost of capital (-10.2%, or -0.3 MEUR2017);
- higher deduction for VFR exempted flights (+2.4%).

DSNA implemented measures that affected recruitment, salaries, non-essential operating costs, capex and the cost of capital. On the other hand, France indicates in the 2020 monitoring report that investments providing capacity, environmental benefits and enabling regulatory compliance have been secured and prioritized.

DSNA actual 2020 terminal costs by nature in TCZ 1

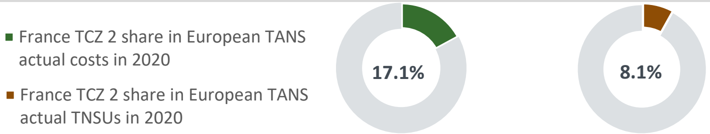


Actual costs variation by nature between 2019 and 2020

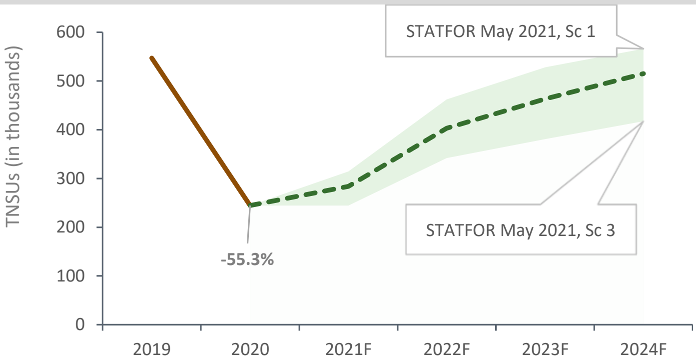


Contextual economic information: terminal air navigation services

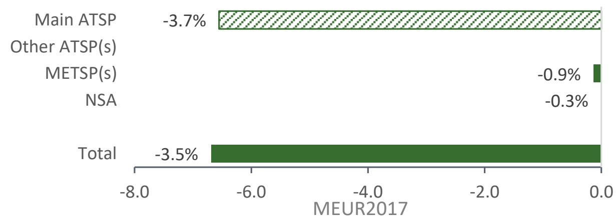
Main ATSP:	DSNA
National currency:	EUR
Number of airports in TCZ:	56



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	198 129 879	192 084 499	-3.1%
Inflation %	1.3%	0.5%	-0.8 p.p.
Real terminal costs (EUR2017)	192 403 991	185 717 482	-3.5%
Total Terminal Navigation Service Units	547 128	244 546	-55.3%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**351.66**	**759.44**	**+116.0%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

France TCZ 2 comprises 56 airports.

Between 2019 and 2020, the terminal unit costs of France TCZ 2 rose substantially (+116.0% in real terms) mainly due to the exceptional -55.3% traffic reduction. In the meantime, terminal costs decreased (-3.5%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-55.3%) would not be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: DSNA - the main ATSP (-3.7%), the MET service provider (-0.9%) and the NSA (-0.3%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of DSNA Terminal ANS costs in TCZ 2 (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	127 847 207	124 850 901	-2.3%
Other operating costs	41 216 350	38 816 781	-5.8%
Depreciation	15 583 462	14 766 351	-5.2%
Cost of capital	5 304 020	5 102 579	-3.8%
Exceptional costs	0	0	
VFR exempted flights	-14 068 365	-14 206 004	+1.0%
Total DSNA terminal costs in TCZ 2	**175 882 674**	**169 330 608**	**-3.7%**

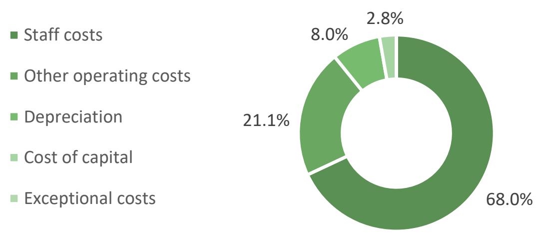
Analysis at main ATSP level

As indicated in the text box above, DSNA actual 2020 terminal costs in TCZ 2 are lower (-3.7%, or -6.6 MEUR2017) than reported in 2019. This results from the combination of:

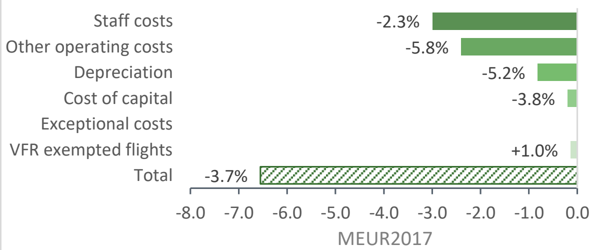
- lower staff costs (-2.3%, or -3.0 MEUR2017);
- lower other operating costs (-5.8%, or -2.4 MEUR2017);
- lower depreciation costs (-5.2%, or -0.8 MEUR2017);
- lower cost of capital (-3.8%, or -0.2 MEUR2017);
- slightly higher deduction for VFR exempted flights (+1.0%).

DSNA implemented measures that affected recruitment, salaries, non-essential operating costs, capex and the cost of capital. On the other hand, France indicates in the 2020 monitoring report that investments providing capacity, environmental benefits and enabling regulatory compliance have been secured and prioritized.

DSNA actual 2020 terminal costs by nature in TCZ 2



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	1 297 829 674	1 290 838 451	-0.5%
Real terminal costs (EUR2017)	250 034 247	240 681 985	-3.7%
Real gate-to-gate costs (EUR2017)	1 547 863 922	1 531 520 436	-1.1%
En-route share in gate-to-gate costs (%)	**83.8%**	**84.3%**	**+0.4 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for France slightly reduced (-1.1%, or -16.3 MEUR2017) in real terms. This is a combination of fairly stable (-0.5%, or -7.0 MEUR2017) en-route and a decrease (-3.7%, or -9.4 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (84.3%) slightly rose (+0.4 p.p.) compared to the figure reported in 2019 (83.8%).

Breakdown of DSNA gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	841 378 628	831 007 494	-1.2%
Other operating costs	338 317 204	347 326 600	+2.7%
Depreciation	166 527 474	155 987 207	-6.3%
Cost of capital	50 473 758	51 120 983	+1.3%
Exceptional costs	0	0	
VFR exempted flights	-21 335 389	-21 182 217	-0.7%
Total DSNA gate-to-gate costs	**1 375 361 675**	**1 364 260 066**	**-0.8%**

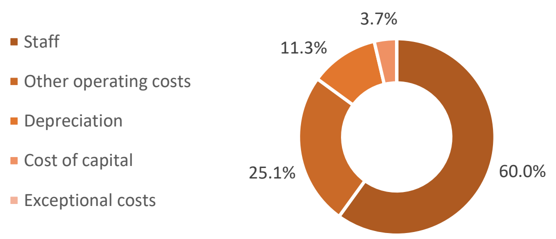
Analysis at main ATSP level

DSNA actual 2020 gate-to-gate costs are slightly lower (-0.8%, or -11.1 MEUR2017) than those reported in 2019. This results from the combination of:

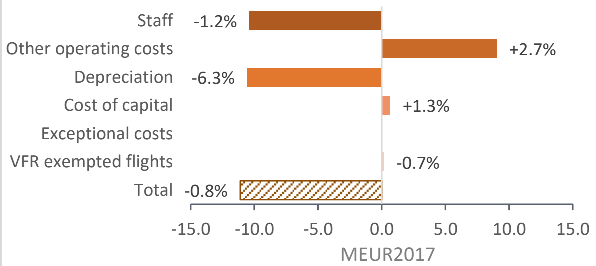
- slightly lower staff costs (-1.2%, or -10.4 MEUR2017);
- higher other operating costs (+2.7%, or +9.0 MEUR2017);
- lower depreciation costs (-6.3%, or -10.5 MEUR2017);
- slightly higher cost of capital (+1.3%, or +0.6 MEUR2017);
- slightly lower deduction for VFR exempted flights (-0.7%).

Details on the drivers behind the changes observed above are provided in the respective analyses of DSNA at en-route and terminal charging zone level.

DSNA actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by France

Annual Monitoring Report 2020

Local level view

Germany

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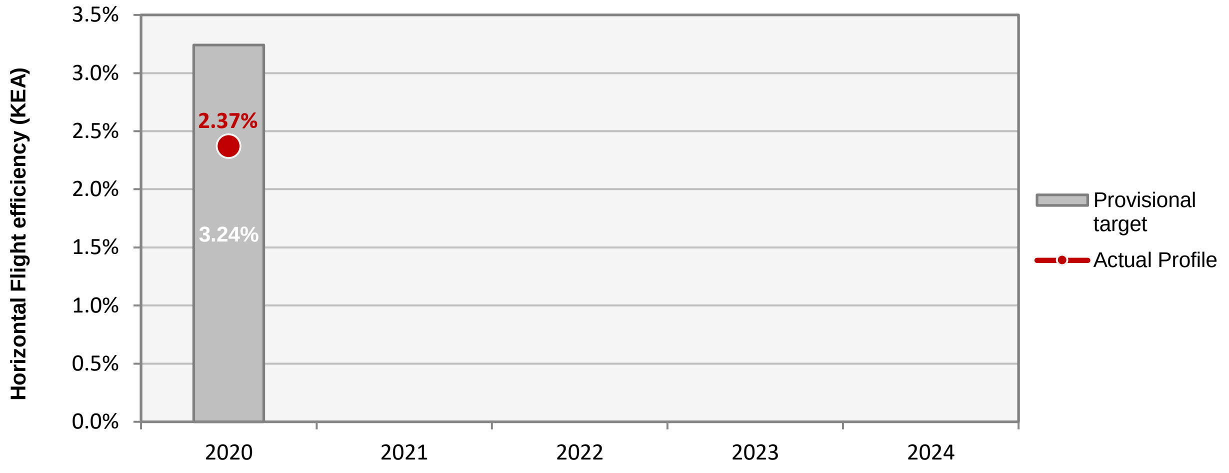
Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
DFS	80	C	C	C	B	B
Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.						

Observations

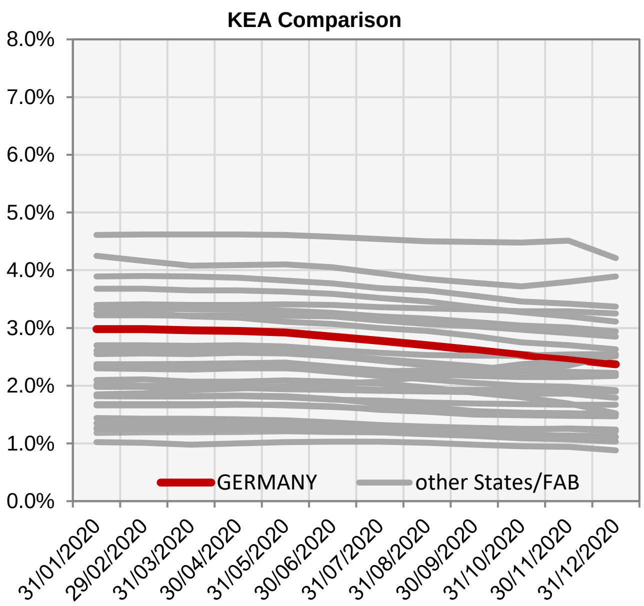
Two out of five EoSM components of the ANSP meet the 2024 target level. Three components, namely "Safety Risk Management", "Safety Assurance" and "Safety Promotion" are below 2024 target levels and are expected to improve in the next years of RP3.

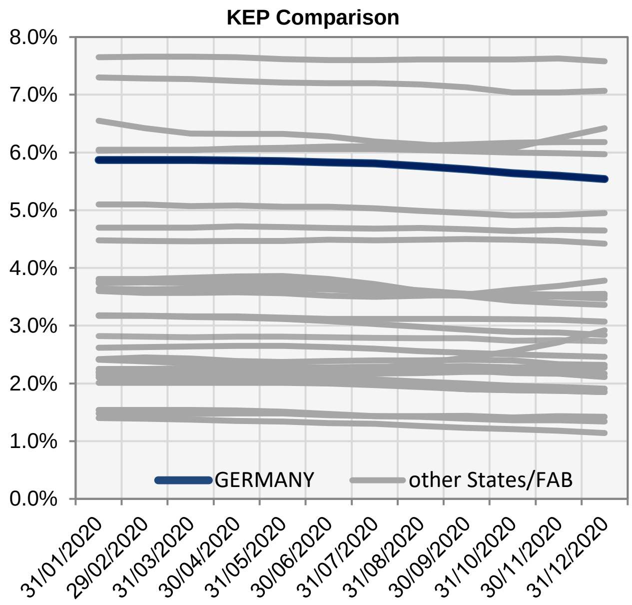
KEA	2020	2021	2022	2023	2024
Provisional target	3.24%				
Actual performance	2.37%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.98%	2.98%	2.96%	2.95%	2.92%	2.85%	2.78%	2.70%	2.62%	2.53%	2.46%	2.37%
KEP	5.87%	5.87%	5.87%	5.86%	5.85%	5.83%	5.81%	5.76%	5.71%	5.64%	5.60%	5.54%
KES	5.45%	5.45%	5.44%	5.43%	5.41%	5.40%	5.37%	5.32%	5.26%	5.19%	5.14%	5.08%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

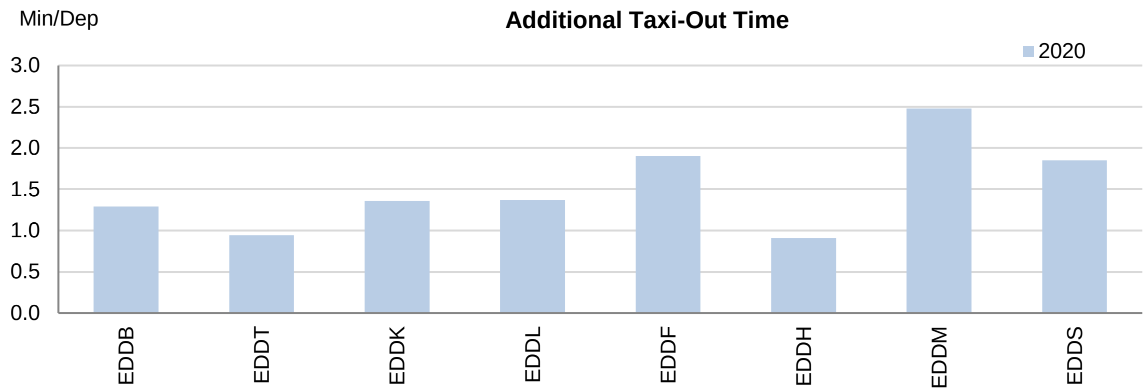
Germany identifies a total of 16 airports as subject to RP3 monitoring.
However, in accordance with IR (EU) 2019/317 and the traffic figures, only 8 of those airports must be monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is established for the 8 airports required and the monitoring of all environment indicators can be performed.

Traffic at the ensemble of German airports under monitoring decreased by 59% in 2020 with respect to 2019. The reduction per airport depends very much on the type of operation. Leipzig (EDDP), with an important cargo operation observed only a 18% drop in traffic, while Munich (EDDM) and Dusseldorf (EDDL) observed a 65% reduction.
Berlin Tegel ceased operations as of November 2020, so 2020 is the only year it will appear in the monitoring.

Additional times at German airports drastically decreased in line with the traffic, although the degree of this reduction varies between airports.

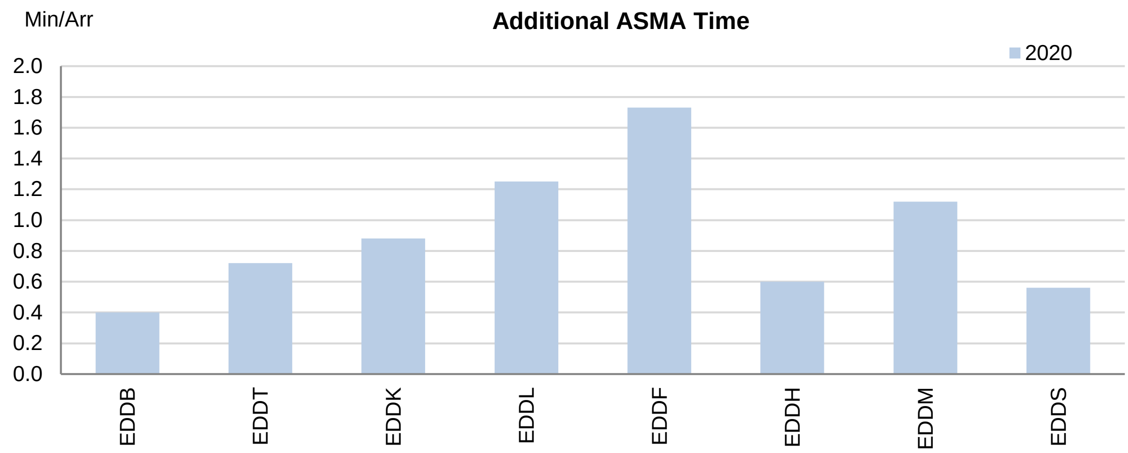
Despite the low traffic numbers, the share of CDO flights stayed rather low in 2020.

2. Additional Taxi-Out Time



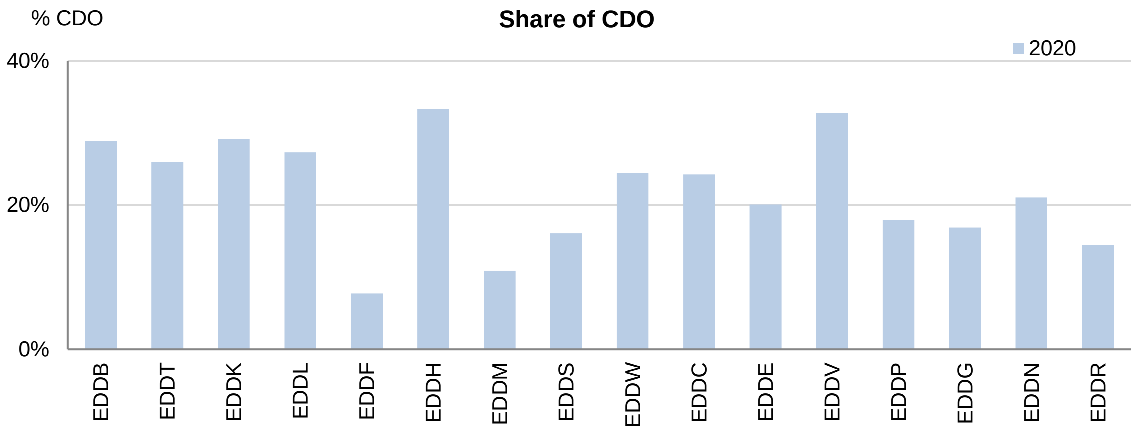
The additional taxi-out times in 2020 at German airports were strongly impacted by the reduction of traffic, dropping below 1 min/dep. at many of these airports between April and October.
Stuttgart (EDDS) and Cologne-Bonn (EDDK) showed a lower improvement with reductions below a 30% and their additional taxi-out times remained above 1 min/dep. throughout the year (except in April at Stuttgart, when they averaged 0.46 min/dep).
Additional times at Frankfurt were the highest in Germany in 2019 and dropped by 51% in 2020 (EDDF; 2019: 3.85 min/dep; 2020: 1.90 min/dep.)
Munich (EDDM; 2019: 3.82 min/dep; 2020: 2.48 min/dep.) seems to be very influenced by de-icing procedures, and showed very high additional taxi-times in the winter months, including December 2020, when this indicator averaged 3.58 min/dep. despite the low traffic.

3. Additional ASMA Time



All German airports except for Berlin Brandenburg show a decrease in the annual additional times in the terminal airspace between 20% and 51% lower than in 2019. Berlin Brandenburg (EDDB; 2019: 0.28 min/arr.; 2020: 0.40 min/arr.) slightly increased its additional ASMA times, but its performance was still the best in the group of German airports under monitoring.
The month of February was clearly the worst in terms of times in the terminal airspace, probably affected by the storms in central and north-western Europe.
The most impressive reduction of additional ASMA times was observed at Munich (EDDM; 2019: 2.07 min/arr.; 2020: 1.12 min/arr.) where this indicator was zero or nearly zero since April until the end of the year.
Frankfurt on the other side showed the lowest reduction (20%) with respect to 2019 (EDDF; 2019: 2.17 min/arr.; 2020: 1.73 min/arr.) and was the airport with the highest additional ASMA times in the monitored SES airports in 2020.

4. Share of arrivals applying CDO



For only 2 out of the 16 airports (Hamburg - EDDH and Hanover - EDDV), the share of CDO flights was above the RP3 overall value in 2020 (32.5%).
The two airports with the highest traffic numbers, Frankfurt (EDDF) and Munich (EDDM), have a rather low share of CDO flights.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Berlin - Brandenburg-EDDB	1.29					0.40					29%				
Berlin - Tegel-EDDT	0.94					0.72					26%				
Cologne-Bonn-EDDK	1.36					0.88					29%				
Dusseldorf-EDDL	1.37					1.25					27%				
Frankfurt-EDDF	1.90					1.73					8%				
Hamburg-EDDH	0.91					0.60					33%				
Munich-EDDM	2.48					1.12					11%				
Stuttgart-EDDS	1.85					0.56					16%				
Bremen-EDDW	-					-					24%				
Dresden-EDDC	-					-					24%				
Erfurt-EDDE	-					-					20%				
Hanover-EDDV	-					-					33%				
Leipzig-Halle-EDDP	-					-					18%				
Muenster-Osnabrueck-EDDG	-					-					17%				
Nuremberg-EDDN	-					-					21%				
Saarbruecken-EDDR	-					-					14%				

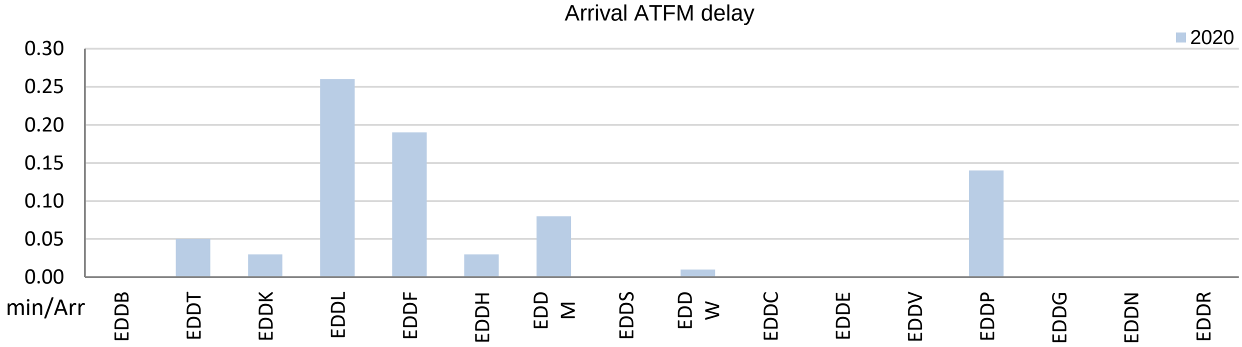
1. Overview

Germany identifies a total of 16 airports as subject to RP3 monitoring.
However, in accordance with IR (EU) 2019/317 and the traffic figures, only 8 of those airports must be monitored for pre-departure delays.
The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is established for the 8 airports required. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at any of these airports, with more than 60% of the reported delay not allocated to any cause.

Traffic at the ensemble of German airports under monitoring decreased by 59% in 2020 with respect to 2019. The reduction per airport depends very much on the type of operation. Leipzig (EDDP), with an important cargo operation observed only a 18% drop in traffic, while Munich (EDDM) and Dusseldorf (EDDL) observed a 65% reduction.
Berlin Tegel ceased operations as of November 2020, so 2020 is the only year it will appear in the monitoring.

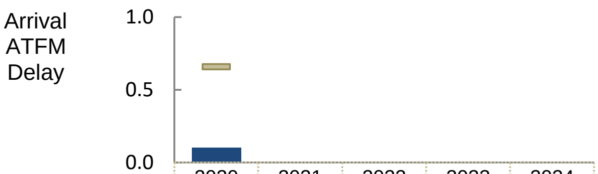
This traffic drop obviously had an important impact in terms of arrival ATFM delays, with virtually zero delays as of April. Slot adherence is above 90% for all German airports and regarding All causes pre-departure delay, Frankfurt stands out with the second highest delay among the SES monitored airports.

2. Arrival ATFM Delay



The national average arrival ATFM delay at these German airports in 2020 was 0.10 min/arr, significantly lower compared with 0.39 min/arr in 2019 (-74%).
The biggest contributor to the minutes of arrival ATFM delays was Frankfurt (EDDF: 2019: 0.69 min/arr.; 2020: 0.19 min/arr.) with important delays in the first trimester. 92% of all delays at EDDF were attributed to weather.
Dusseldorf showed very high weather delays in the first two months of the year, leaving this airport with the highest annual average arrival ATFM delay per flight in Germany (EDDL: 2019: 0.68 min/arr.; 2020: 0.26 min/arr.) although still very low. 81% of these delays were due to weather.
In a very similar way, Munich (EDDM: 2019: 0.25 min/arr.; 2020: 0.08 min/arr.) only had delays the first two months of the year, and mostly associated with weather (81%)
Leipzig had some weather delays at different moments in the year.

3. Arrival ATFM Delay – National Target and Incentive Scheme

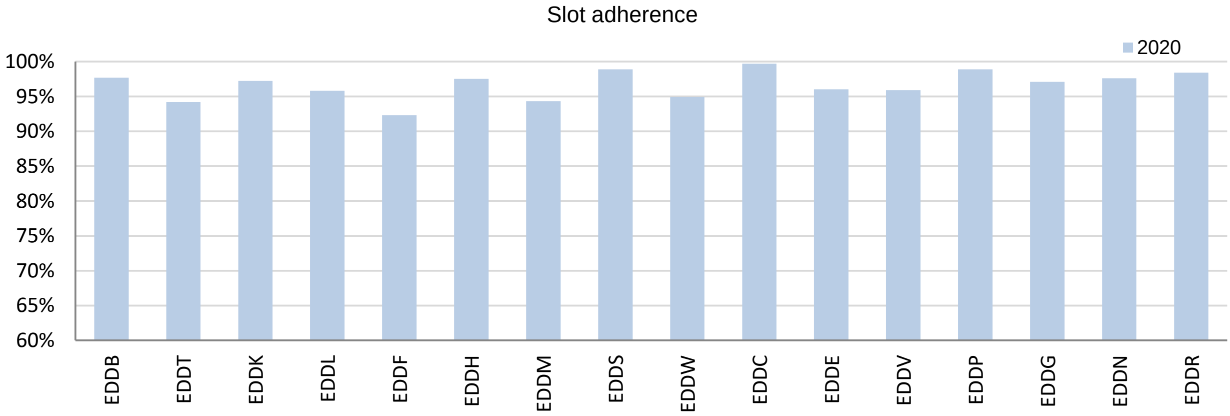


	2020	2021	2022	2023	2024
Actual	0.10				
Target	0.66				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from German airports virtually disappeared as of April. These annual figures are therefore driven by the performance in the first trimester.
All German airports showed adherence above 92% and the national average was 95.5%. With regard to the 4.5% of flights that did not adhere, 3.5% was early and 1% was late.
It is worth mentioning that at the two biggest airports Frankfurt and Munich, the share of departures ahead of the Slot Tolerance Window (6.6% and 4.9%, respectively) was significantly higher than the departures after the STW (1.1% and 0.7%)

5. ATC Pre-departure Delay

The share of unidentified delay reported by all 8 German airports subject to monitoring of this indicator in 2020 has been above 40% for more than 2 months in the year, preventing the calculation of this indicator. This is partially due to the special traffic composition for most months in 2020. Most of these airports normally had proper reporting before the pandemic and only after April 2020 the share of unidentified delay exceeded the required minimum for the computation.
On the other hand the insufficient data quality provided by Cologne (EDDK) is a long standing issue prior to April 2020.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at German airports in 2020 was between 6.71 min/dep for Tegel (EDDT) and 16.49 min/dep. for Frankfurt (EDDF) which is the 2nd highest among the RP3 monitored airports.
The higher delays per flight were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances. In December there was also a general increase at most of these airports.

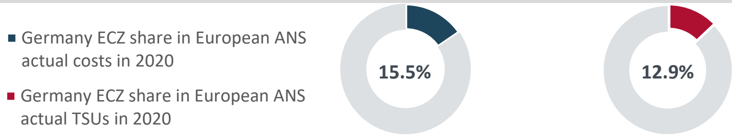
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

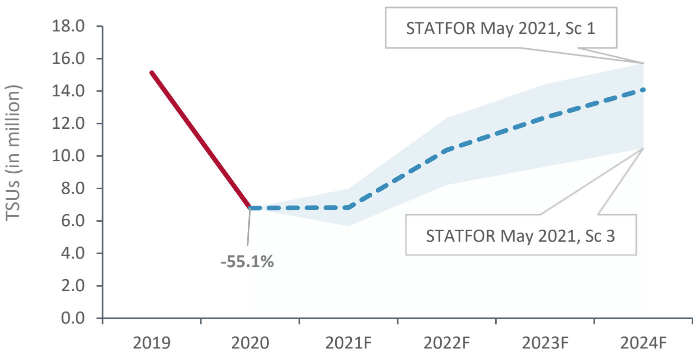
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Berlin - Brandenburg-EDDB	0					97.7%					n/a					8.17				
Berlin - Tegel-EDDT	0.05					94.2%					n/a					6.71				
Cologne-Bonn-EDDK	0.03					97.2%					n/a					10.77				
Dusseldorf-EDDL	0.26					95.8%					n/a					8.19				
Frankfurt-EDDF	0.19					92.3%					n/a					16.49				
Hamburg-EDDH	0.03					97.5%					n/a					7.38				
Munich-EDDM	0.08					94.3%					n/a					7.34				
Stuttgart-EDDS	0					98.9%					n/a					6.90				
Bremen-EDDW	0.01					94.9%					-					-				
Dresden-EDDC	0					99.7%					-					-				
Erfurt-EDDE	0					96.0%					-					-				
Hanover-EDDV	0					95.9%					-					-				
Leipzig-Halle-EDDP	0.14					98.9%					-					-				
Muenster-Osnabrueck-EDDG	0					97.1%					-					-				
Nuremberg-EDDN	0					97.6%					-					-				
Saarbruecken-EDDR	0					98.4%					-					-				

Contextual economic information: en-route air navigation services

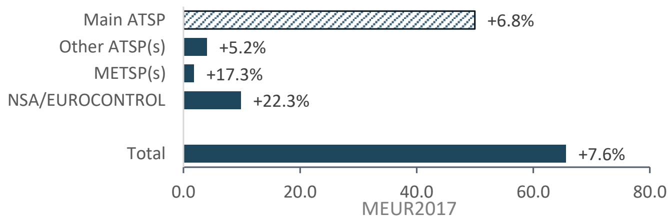
FAB:	FABEC
Main ATSP:	DFS
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	1 014 151 556	889 361 603	961 337 932	-5.2%	+8.1%
Inflation %	0.0%	1.4%	0.4%	0.4 p.p.	-1.0 p.p.
Real en-route costs (EUR2017)	986 984 774	866 438 129	932 035 612	-5.6%	+7.6%
Total en-route Service Units (TSUs)	7 033 772	15 132 422	6 792 043	-3.4%	-55.1%
Real en-route unit cost per Service Unit (EUR2017)	**140.32**	**57.26**	**137.22**	**-2.2%**	**+139.7%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-2.2%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of lower (-3.4%) actual TSUs and lower (-5.6%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-55.1%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Germany ECZ rose substantially (+139.7% in real terms) mainly due to the exceptional -55.1% traffic reduction. In the meantime, en-route costs increased (+7.6%) in real terms.

The higher en-route costs at CZ level are a combination of the following changes observed for the different entities: DFS - the main ATSP (+6.8%), the other ATSP operating in the CZ - MUAC (+5.2%), the MET service provider (+17.3%) and the NSA/EUROCONTROL (+22.3%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of DFS en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	617 499 190	582 599 197	574 697 083	-6.9%	-1.4%
Other operating costs	69 507 255	70 513 099	79 030 688	+13.7%	+12.1%
Depreciation	65 268 853	70 306 216	64 982 526	-0.4%	-7.6%
Cost of capital	49 660 881	57 025 449	23 980 136	-51.7%	-57.9%
Exceptional costs	43 260 290	-44 652 671	43 087 938	-0.4%	+196.5%
VFR exempted flights	0	0	0		
Total DFS en-route costs	**845 196 469**	**735 791 291**	**785 778 372**	**-7.0%**	**+6.8%**

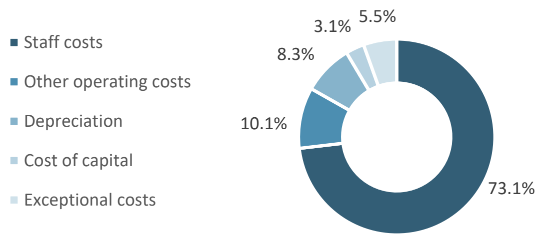
Analysis at main ATSP level

In 2020, DFS actual en-route costs were lower (-7.0%) compared to those reported in the initial plans submitted in December 2020.

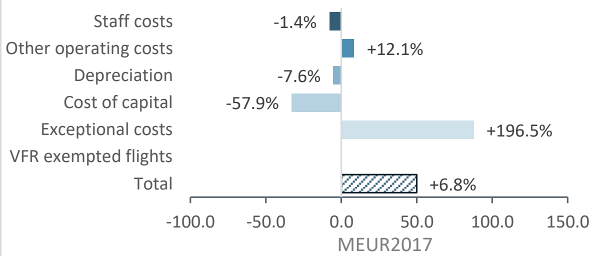
As indicated in the text box above, DFS actual 2020 en-route costs are higher (+6.8%, or +50.0 MEUR2017) compared to those reported in 2019. This results from the combination of:
- slightly lower staff costs (-1.4%, or -7.9 MEUR2017);
- significantly higher other operating costs (+12.1%, or +8.5 MEUR2017);
- lower depreciation costs (-7.6%, or -5.3 MEUR2017);
- significantly lower cost of capital (-57.9%, or -33.0 MEUR2017);
- significantly higher exceptional costs (+196.5%, or +87.7 MEUR2017).

It is noteworthy that the subsidies from Federal Government were reported as a negative exceptional item in 2019, affecting the level of 2019 en-route costs and the changes observed in 2020 for exceptional items (see also **Note 1** at the end of this report).
DFS implemented short-term measures that included suspension of new recruitments, conclusion of a collective agreement enabling more flexible personnel costs in the short term, partial suspension of operational training, reduction in travel costs and postponement of existing projects. In addition, a significantly lower WACC rate was applied to compute the cost of capital in 2020.

DFS actual 2020 en-route costs by nature



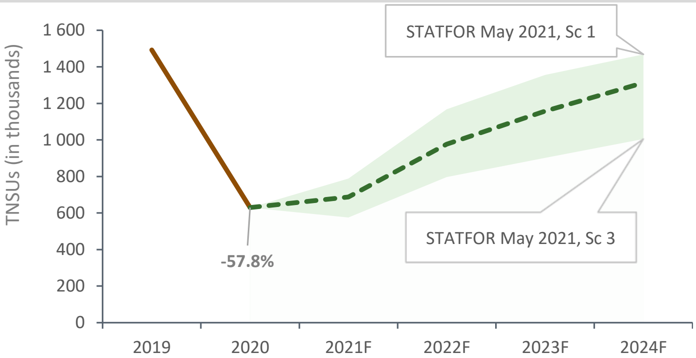
Actual costs variation by nature between 2019 and 2020



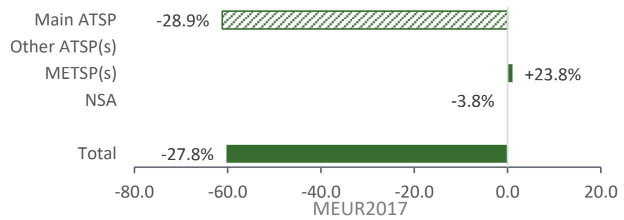
Contextual economic information: terminal air navigation services

Main ATSP:	DFS
National currency:	EUR
Number of airports in TCZ:	16

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	222 772 427	165 585 125	-25.7%
Inflation %	1.4%	0.4%	-1.0 p.p.
Real terminal costs (EUR2017)	216 551 824	156 354 812	-27.8%
Total Terminal Navigation Service Units	1 492 294	630 014	-57.8%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**145.11**	**248.18**	**+71.0%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Germany TCZ comprises 16 airports.

Between 2019 and 2020, the terminal unit costs of Germany TCZ rose substantially (+71.0% in real terms) mainly due to the exceptional -57.8% traffic reduction. In the meantime, terminal costs significantly reduced (-27.8%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-57.8%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: DFS - the main ATSP (-28.9%), the MET service provider (+23.8%) and the NSA (-3.8%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of DFS Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	196 104 959	188 423 121	-3.9%
Other operating costs	30 290 039	41 420 651	+36.7%
Depreciation	19 173 062	22 223 068	+15.9%
Cost of capital	9 037 432	-114 233 833	-1364.0%
Exceptional costs	-43 075 978	12 532 213	+129.1%
VFR exempted flights	0	0	
Total DFS terminal costs in TCZ	**211 529 514**	**150 365 220**	**-28.9%**

Analysis at main ATSP level

As indicated in the text box above, DFS actual 2020 terminal costs in TCZ are significantly lower (-28.9%, or -61.2 MEUR2017) than those reported in 2019. This results from the combination of:

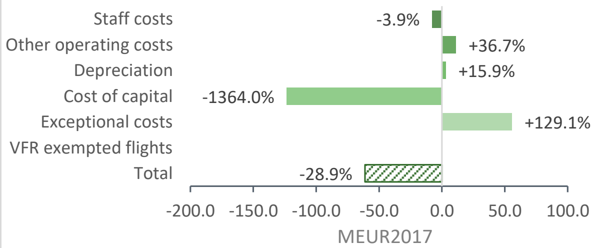
- lower staff costs (-3.9%, or -7.7 MEUR2017);
- significantly higher other operating costs (+36.7%, or +11.1 MEUR2017);
- significantly higher depreciation costs (+15.9%, or +3.1 MEUR2017);
- significantly lower negaive cost of capital (-1364.0%, or -123.3 MEUR2017);
- significantly higher exceptional costs (+129.1%, or +55.6 MEUR2017).

It should be noted that the subsidies from the Federal Government were reported as a negative exceptional item in 2019, affecting the level of 2019 terminal costs and the changes observed in 2020 for exceptional items (see also **Note 1** at the end of this report).
In addition, Germany indicates that DFS actual costs in TCZ for 2020 include negative cost of capital resulting from the use of a negative rate of return on equity (see also **Note 2** at the end of this report).
DFS implemented short-term measures that included suspension of new recruitments, conclusion of a collective agreement enabling more flexible personnel costs in the short term, partial suspension of operational training, reduction in travel costs and postponement of existing projects.

DFS actual 2020 terminal costs by nature in TCZ

Cost distribution by nature cannot be presented in a pie-chart due to reporting of negative cost of capital in 2020

Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	866 438 129	932 035 612	+7.6%
Real terminal costs (EUR2017)	216 551 824	156 354 812	-27.8%
Real gate-to-gate costs (EUR2017)	1 082 989 953	1 088 390 424	+0.5%
En-route share in gate-to-gate costs (%)	**80.0%**	**85.6%**	**+5.6 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Germany slightly rose (+0.5%, or +5.4 MEUR2017) in real terms. This is a combination of an increase (+7.6%, or +65.6 MEUR2017) in en-route and a significant decrease (-27.8%, or -60.2 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (85.6%) increased (+5.6 p.p.) compared to the figure reported in 2019 (80.0%).

Breakdown of DFS gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	778 704 157	763 120 204	-2.0%
Other operating costs	100 803 138	120 451 340	+19.5%
Depreciation	89 479 278	87 205 594	-2.5%
Cost of capital	66 062 881	-90 253 697	-236.6%
Exceptional costs	-87 728 648	55 620 151	+163.4%
VFR exempted flights	0	0	
Total DFS gate-to-gate costs	**947 320 805**	**936 143 592**	**-1.2%**

Analysis at main ATSP level

DFS actual 2020 gate-to-gate costs are slightly lower (-1.2%, or -11.2 MEUR2017) than those reported in 2019. This results from the combination of:

- slightly lower staff costs (-2.0%, or -15.6 MEUR2017);
- significantly higher other operating costs (+19.5%, or +19.6 MEUR2017);
- slightly lower depreciation costs (-2.5%, or -2.3 MEUR2017);
- significantly lower negative cost of capital (-236.6%, or -156.3 MEUR2017);
- significantly higher exceptional costs (+163.4%, or +143.3 MEUR2017).

It should be noted that the subsidies from the Federal Government were reported as a negative exceptional item in 2019, affecting the level of 2019 gate-to-gate costs and the changes observed in 2020 for exceptional items (see also Note 1 at the end of this report).

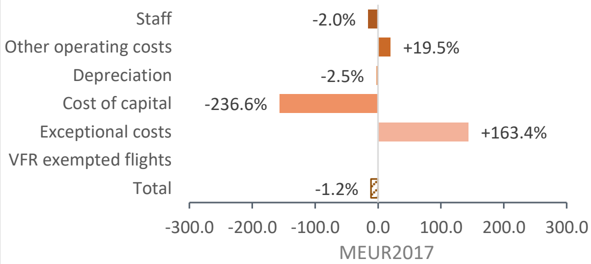
In addition, Germany indicates that DFS actual costs in TCZ for 2020 include negative cost of capital resulting from the use of a negative rate of return on equity (see also Note 2 at the end of this report).

Details on the drivers behind the changes observed above are provided in the respective analyses of DFS at en-route and terminal charging zone level.

DFS actual 2020 gate-to-gate costs by nature

Cost distribution by nature cannot be presented in a pie-chart due to reporting of negative cost of capital in 2020

Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Germany

Note 1: Contributions by the Federal Republic of Germany to DFS equity in RP2

The German legislator approved a contribution to the registered capital of DFS over the period from 2015 to 2019 (RP2). With these actions, the Federal Republic of Germany is strengthening the equity position of DFS with an overall contribution of 601.9 M€ distributed over the RP2.

These amounts are recorded as negative exceptional costs in the en-route and terminal Reporting Tables. In turn, these negative exceptional items artificially reduce the DFS actual costs in 2019 thus affecting the comparison between 2019 and 2020.

Note 2: Reporting of negative cost of capital for DFS in the TCZ

According to the information provided by Germany, DFS has used a “negative” rate of return on equity to calculate the weighted average cost of capital rate for DFS activity in the TCZ, which in turn is reflected in the reporting of the significant negative amount for cost of capital in 2020.

This negative figure for cost of capital affects the level of DFS terminal costs in TCZ in 2020 and the comparison between 2019 and 2020 actual figures at terminal and gate-to-gate levels.

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Annual Monitoring Report 2020
Local level view
Netherlands

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Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
LVNL	95	C	C	C	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

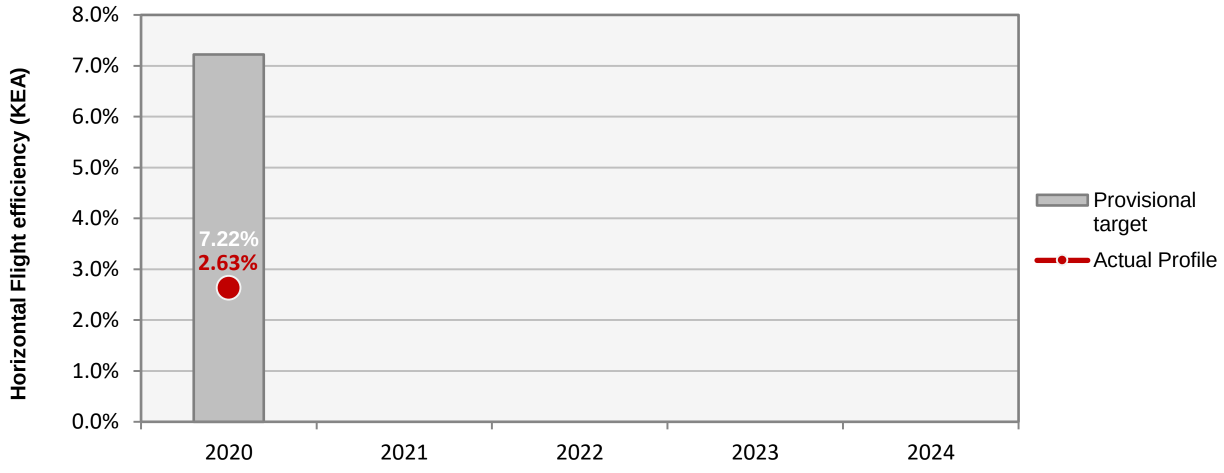
Observations

Four out of five EoSM components of the LVNL meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level, at level C. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

All five EoSM components of MUAC meet, or exceed, already the 2024 target level.

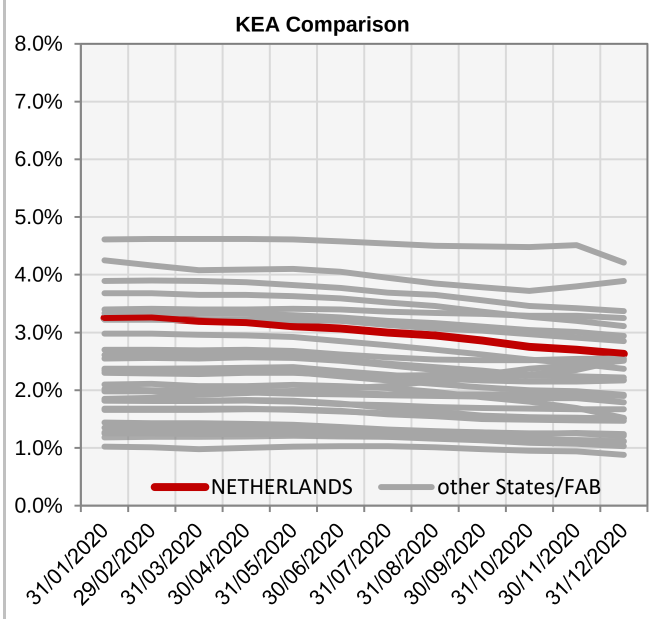
KEA

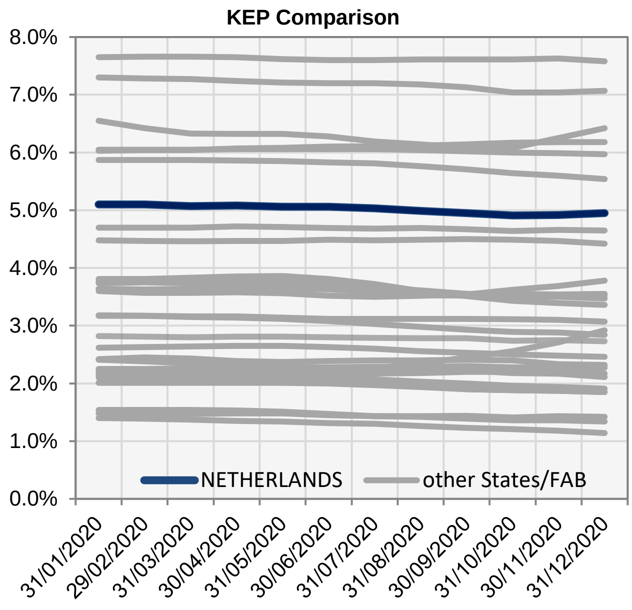
	2020	2021	2022	2023	2024
Provisional target	7.22%				
Actual performance	2.63%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	3.25%	3.26%	3.20%	3.18%	3.11%	3.07%	3.00%	2.95%	2.86%	2.75%	2.70%	2.63%
KEP	5.10%	5.10%	5.07%	5.08%	5.06%	5.06%	5.03%	4.99%	4.95%	4.91%	4.92%	4.95%
KES	4.65%	4.64%	4.63%	4.64%	4.63%	4.63%	4.61%	4.59%	4.56%	4.53%	4.56%	4.60%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

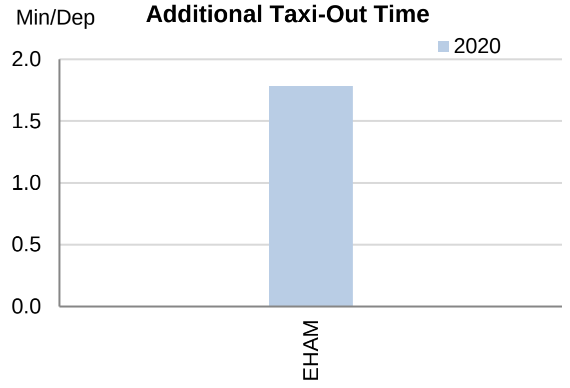
1. Overview

For the Netherlands, the scope of the performance monitoring of terminal services under RP3 comprises a total of 4 airports. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, only Amsterdam must be monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.

Traffic at these 4 airports decreased in 2020 by 53%. Amsterdam, after reaching its maximum allowed capacity of 500 000 movements per year in previous years, saw a reduction in traffic in 2020 of 54%.

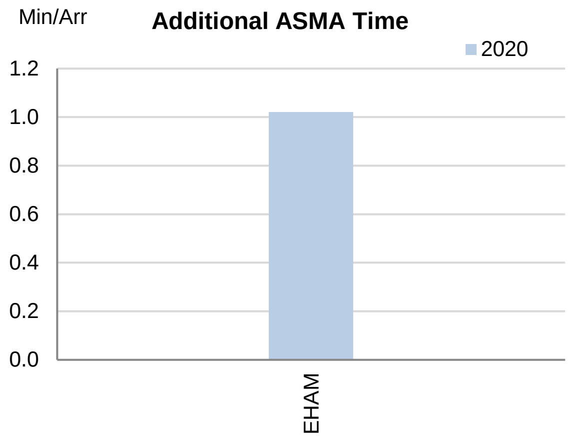
Both additional time indicators improved by 43% with respect to 2019,in line with the reduction of traffic since April.

2. Additional Taxi-Out Time



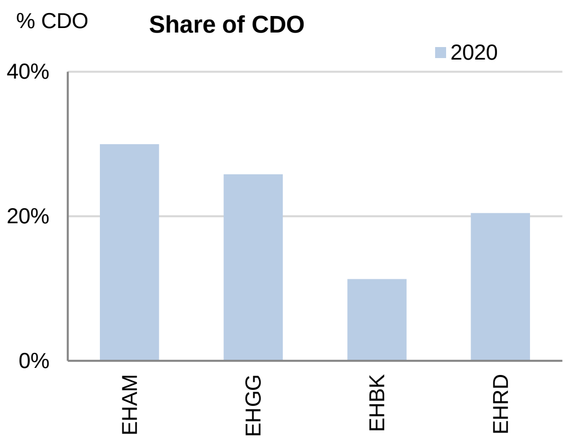
Additional taxi-out times at Amsterdam (EHAM; 2019: 3.11 min/dep; 2020: 1.78 min/dep.) already showed improvement in the first quarter of the year compared to 2019, and then drastically dropped to 0.37 min/dep. average in April 2020. The rest of the year these additional times remained low, around half of the values in 2019.

3. Additional ASMA Time



Additional times in the terminal airspace of Amsterdam (EHAM; 2019: 1.78 min/arr.; 2020: 1.02 min/arr.), after averaging more than 2 min/arr. in February (probably due to the storms in central Europe), plummeted to zero during April, May and June 2020. From June until the end of the year, the additional times steadily increased but still remained well under the 1 min/arr.

4. Share of arrivals applying CDO



Amsterdam, being the major airport in the Netherlands, has the highest share of CDO flights of the 4 airports: 30.0% which is a little below the overall RP3 value in 2020 (32.5%). Groningen (EHGG) and Rotterdam (EHRD) have (a little) more than 20% of CDO flights while Maastricht-Aachen (EHBK) has only 11.3% of CDO flights.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

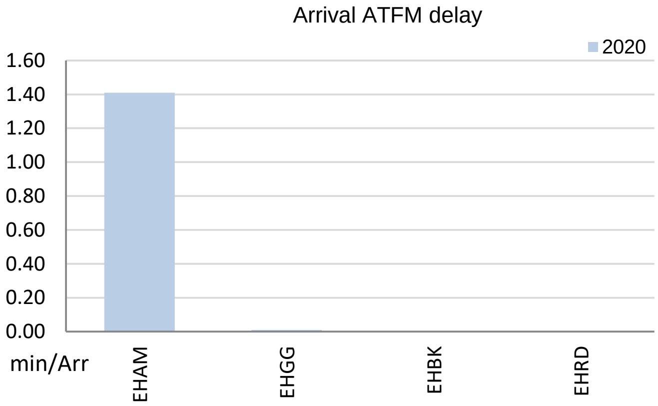
Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Amsterdam - Schiphol-EHAM	1.78					1.02					30%				
Groningen-EHGG	-					-					26%				
Maastricht-Aachen-EHBK	-					-					11%				
Rotterdam-EHRD	-					-					20%				

1. Overview

For the Netherlands, the scope of the performance monitoring of terminal services under RP3 comprises a total of 4 airports. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, only Amsterdam must be monitored for pre-departure delays.
The Airport Operator Data Flow is fully established at Amsterdam and the monitoring of pre-departure delays can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

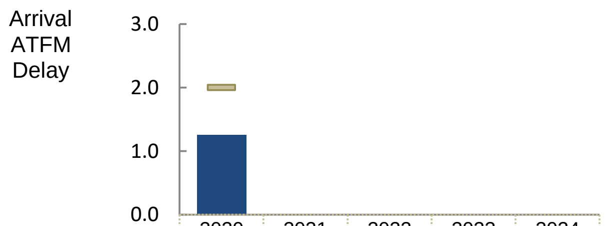
Traffic at these 4 airports decreased in 2020 by 53%. Amsterdam, after reaching its maximum allowed capacity of 500 000 movements per year in previous years, saw a reduction in traffic in 2020 of 54%.
Despite the traffic reduction, arrival ATFM delays at Amsterdam were still high (5th highest in the SES area) and all causes pre-departure delays were also very high (2nd highest in the SES area) especially in the second trimester.

2. Arrival ATFM Delay



The massive traffic drop due to the COVID-19 pandemic outbreak in Europe as from March 2020 has reduced the 2020 March - December traffic to a very low level at these airports (from -36% in March down to -89% in April).
Amsterdam (EHAM: 2019: 4.23 min/arr.; 2020: 1.41 min/arr.) registered significant arrival ATFM delays during the first trimester of 2020, averaging 3.18 min/arr during this period (vs 4.93 min/arr during the same first trimester of 2019).
Zero delays were observed between April and June, and some minor delays were caused by weather regulations during the second half of the year,
The other 3 airports did not observe any arrival ATFM delay in 2020.

3. Arrival ATFM Delay – National Target and Incentive Scheme

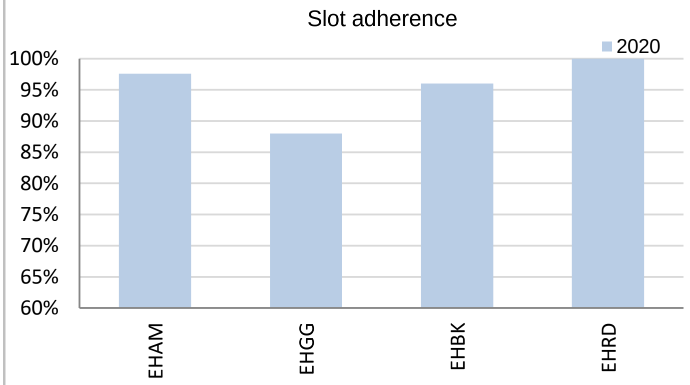


	2020	2021	2022	2023	2024
Actual	1.26				
Target	2.00				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Amsterdam (EHAM), Rotterdam (EHRD) and Maastricht (EHBK) airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
These three airports showed adherence above 95% and the national average was 97.6%.With regard to the 2.4% of flights that did not adhere, 0.9% was early and 1.5% was late.
Only 25 departures from Groningen (EHGG) were regulated in 2020, so the 12% of departures outside of the STW are in fact only 3 flights.

5. ATC Pre-departure Delay

The share of unidentified delay reported by Amsterdam (the only Dutch airport subject to monitoring of this indicator) in 2020 has been above 40% for more than 2 months in the year, preventing the calculation of this indicator.
The insufficient data quality provided by Amsterdam is a long standing issue prior to April 2020, but the situation has worsened since April 2020 due to the special traffic composition since then. The unidentified delay after April 2020 has been around 80% of all delays.

6. All Causes Pre-departure Delay

Amsterdam is the only Dutch airport subject to the monitoring of this indicator.
The total (all causes) delay in the actual off block time at Amsterdam in 2020 was 15.52 min/dep. which is the 3rd highest among the RP3 monitored airports. The higher delays per flight were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances. In November and December there was also a significant increase of the delay per flight, averaging almost 25 min/dep in December.

7. Appendix

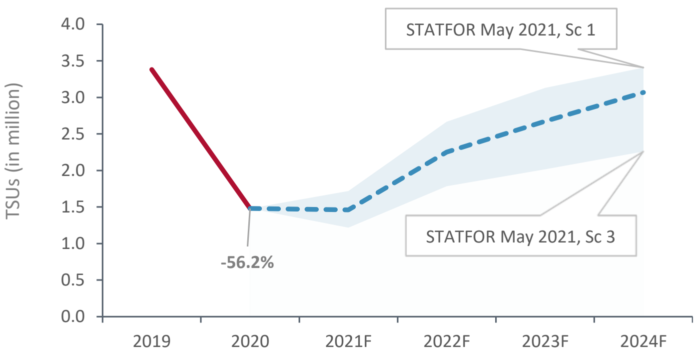
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Amsterdam - Schiphol-EHAM	1.41					97.6%					n/a					15.52				
Groningen-EHGG	0.01					88.0%					-					-				
Maastricht-Aachen-EHBK	0					96.0%					-					-				
Rotterdam-EHRD	0					100.0%					-					-				

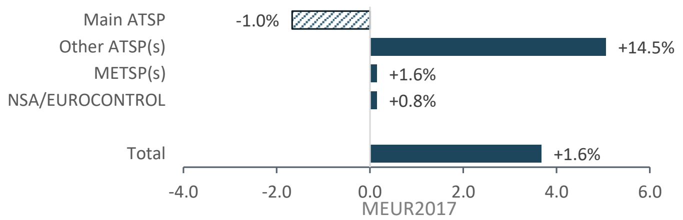
Contextual economic information: en-route air navigation services

FAB:	FABEC
Main ATSP:	LVNL
National currency:	EUR

Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	244 114 049	237 137 991	243 029 947	-0.4%	+2.5%
Inflation %	1.2%	2.7%	1.1%	-0.1 p.p.	-1.6 p.p.
Real en-route costs (EUR2017)	233 290 269	228 706 280	232 377 205	-0.4%	+1.6%
Total en-route Service Units (TSUs)	1 463 000	3 380 622	1 479 593	+1.1%	-56.2%
Real en-route unit cost per Service Unit (EUR2017)	**159.46**	**67.65**	**157.05**	**-1.5%**	**+132.2%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were slightly lower (-1.5%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+1.1%) actual TSUs and mostly stable (-0.4%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-56.2%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Netherlands ECZ rose substantially (+132.2% in real terms) mainly due to the exceptional -56.2% traffic reduction. In the meantime, en-route costs slightly rose (+1.6%) in real terms.

The slightly higher en-route costs at CZ level are a combination of the following changes observed for the different entities: LVNL - the main ATSP (-1.0%), the other ATSP operating in the CZ - MUAC (+14.5%), the MET service provider (+1.6%) and the NSA/EUROCONTROL (+0.8%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of LVNL en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	106 165 501	109 017 230	102 971 842	-3.0%	-5.5%
Other operating costs	40 369 151	43 933 037	44 545 043	+10.3%	+1.4%
Depreciation	14 517 343	13 157 177	17 139 000	+18.1%	+30.3%
Cost of capital	1 061 065	979 620	759 000	-28.5%	-22.5%
Exceptional costs	0	0	0		
VFR exempted flights	-577 817	-568 317	-565 925	-2.1%	-0.4%
Total LVNL en-route costs	**161 535 243**	**166 518 747**	**164 848 959**	**+2.1%**	**-1.0%**

Analysis at main ATSP level

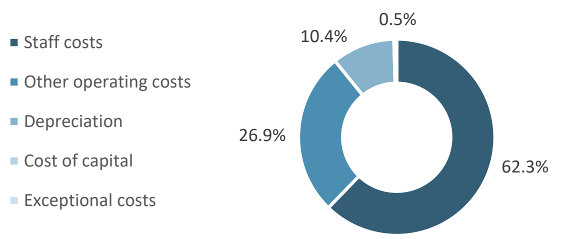
In 2020, LVNL actual en-route costs were higher (+2.1%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, LVNL actual 2020 en-route costs are slightly lower (-1.0%, or -1.7 MEUR2017) compared to those reported in 2019. This results from the combination of:

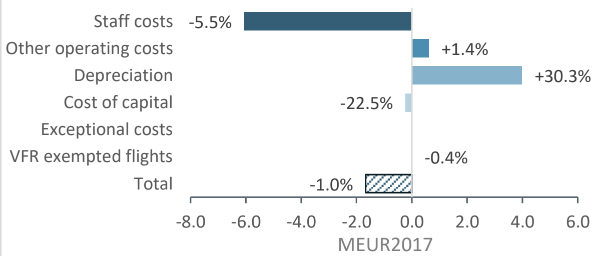
- lower staff costs (-5.5%, or -6.0 MEUR2017);
- slightly higher other operating costs (+1.4%, or +0.6 MEUR2017);
- significantly higher depreciation costs (+30.3%, or +4.0 MEUR2017);
- significantly lower cost of capital (-22.5%, or -0.2 MEUR2017);
- relatively stable deduction for VFR exempted flights (-0.4%).

According to the information provided by the Netherlands, the lower staff costs in 2020 reflect savings achieved from COVID-19 measures as well as one-time addition to a provision for staff costs in 2019. The Netherlands also indicate that a number of cost-containment measures were taken by LVNL at company level to mitigate the impact of COVID-19.

LVNL actual 2020 en-route costs by nature

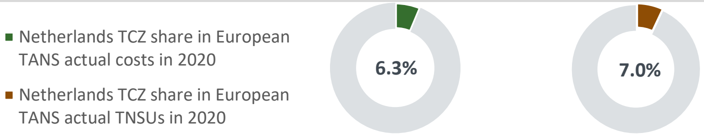


Actual costs variation by nature between 2019 and 2020

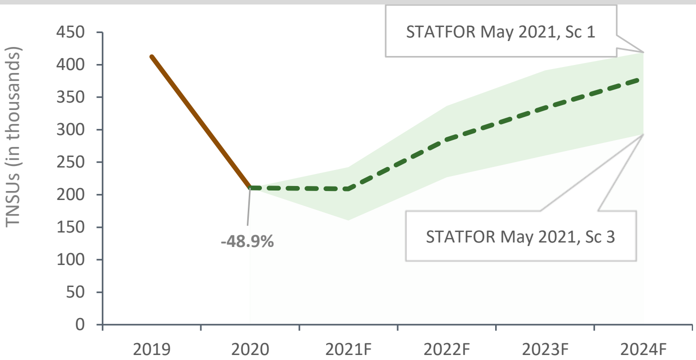


Contextual economic information: terminal air navigation services

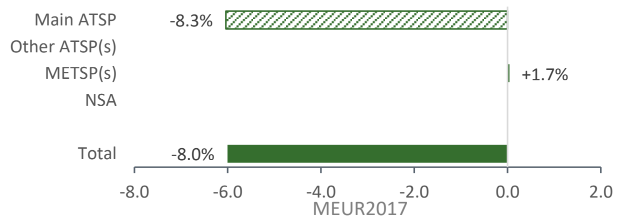
Main ATSP:	LVNL
National currency:	EUR
Number of airports in TCZ:	4



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	77 845 000	72 301 444	-7.1%
Inflation %	2.7%	1.1%	-1.6 p.p.
Real terminal costs (EUR2017)	74 861 717	68 854 896	-8.0%
Total Terminal Navigation Service Units	412 433	210 653	-48.9%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**181.51**	**326.86**	**+80.1%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Netherlands TCZ comprises 4 airports.

Between 2019 and 2020, the terminal unit costs of Netherlands TCZ rose substantially (+80.1% in real terms) mainly due to the exceptional -48.9% traffic reduction. In the meantime, terminal costs decreased (-8.0%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-48.9%) would not be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: LVNL - the main ATSP (-8.3%) and the MET service provider (+1.7%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of LVNL Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	47 558 319	45 689 317	-3.9%
Other operating costs	19 165 607	15 078 541	-21.3%
Depreciation	5 739 764	5 804 688	+1.1%
Cost of capital	427 356	279 000	-34.7%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total LVNL terminal costs in TCZ	**72 891 046**	**66 851 546**	**-8.3%**

Analysis at main ATSP level

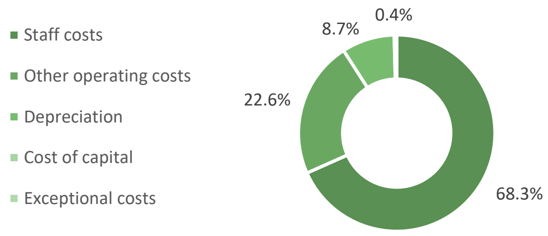
As indicated in the text box above, LVNL actual 2020 terminal costs in TCZ are lower (-8.3%, or -6.0 MEUR2017) than those reported in 2019. This results from the combination of:

- lower staff costs (-3.9%, or -1.9 MEUR2017);
- significantly lower other operating costs (-21.3%, or -4.1 MEUR2017);
- slightly higher depreciation costs (+1.1%, or +0.1 MEUR2017);
- significantly lower cost of capital (-34.7%, or -0.1 MEUR2017).

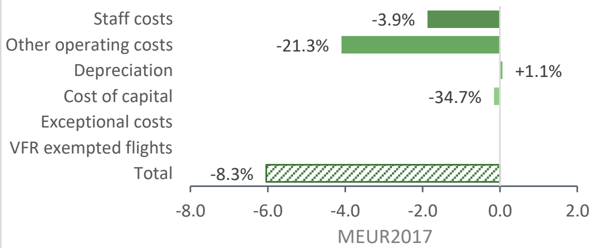
According to the information provided by the Netherlands, the lower staff costs in 2020 reflect savings achieved from COVID-19 measures as well as one-time addition to a provision for staff costs in 2019.

The Netherlands also indicate that a number of cost-containment measures were taken by LVNL at company level to mitigate the impact of COVID-19, with proportionally more savings being achieved in the terminal charging zone.

LVNL actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	228 706 280	232 377 205	+1.6%
Real terminal costs (EUR2017)	74 861 717	68 854 896	-8.0%
Real gate-to-gate costs (EUR2017)	303 567 996	301 232 100	-0.8%
En-route share in gate-to-gate costs (%)	**75.3%**	**77.1%**	**+1.8 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Netherlands slightly reduced (-0.8%, or -2.3 MEUR2017) in real terms. This is a combination of a slight increase (+1.6%, or +3.7 MEUR2017) in en-route and a decrease (-8.0%, or -6.0 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (77.1%) slightly rose (+1.8 p.p.) compared to the figure reported in 2019 (75.3%).

Breakdown of LVNL gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	156 575 549	148 661 159	-5.1%
Other operating costs	63 098 645	59 623 584	-5.5%
Depreciation	18 896 941	22 943 688	+21.4%
Cost of capital	1 406 976	1 038 000	-26.2%
Exceptional costs	0	0	
VFR exempted flights	-568 317	-565 925	-0.4%
Total LVNL gate-to-gate costs	**239 409 794**	**231 700 505**	**-3.2%**

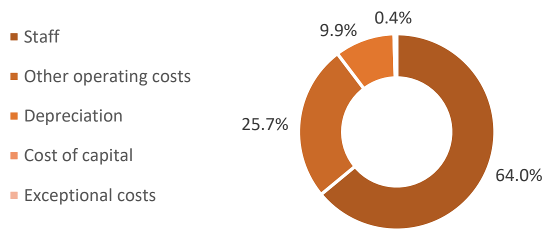
Analysis at main ATSP level

LVNL actual 2020 gate-to-gate costs are lower (-3.2%, or -7.7 MEUR2017) than those reported in 2019. This results from the combination of:

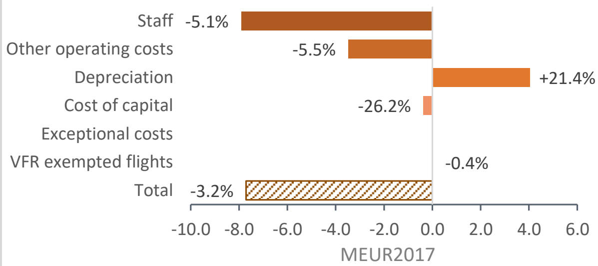
- lower staff costs (-5.1%, or -7.9 MEUR2017);
- lower other operating costs (-5.5%, or -3.5 MEUR2017);
- significantly higher depreciation costs (+21.4%, or +4.0 MEUR2017);
- significantly lower cost of capital (-26.2%, or -0.4 MEUR2017);
- relatively stable deduction for VFR exempted flights (-0.4%).

Details on the drivers behind the changes observed above are provided in the respective analyses of LVNL at en-route and terminal charging zone level.

LVNL actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Netherlands

Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
MUAC	93	C	C	D	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

MUAC oversight is exercised in a coordinated manner by the Four States' NSAs (Belgium, Germany, Luxembourg and the Netherlands) over which territories and airspaces MUAC provides air traffic services. Safety performance of MUAC is reported separately of these fours States as it has been assessed and agreed by the four NSAs.

Observations

All five EoSM components of MUAC meet, or exceed, already the 2024 target level.

Annual Monitoring Report 2020
Local level view
Switzerland

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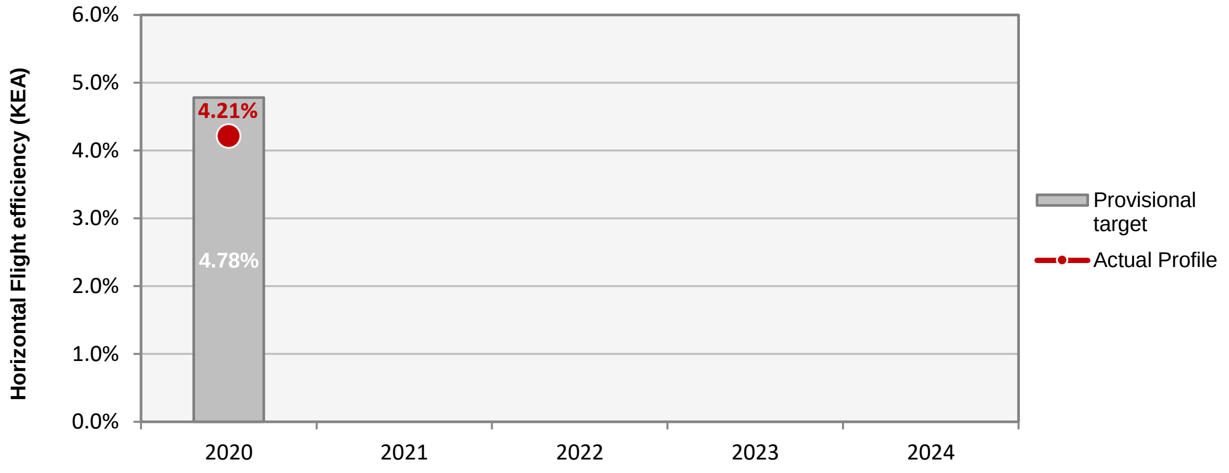
Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
Skyguide	89	C	C	C	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

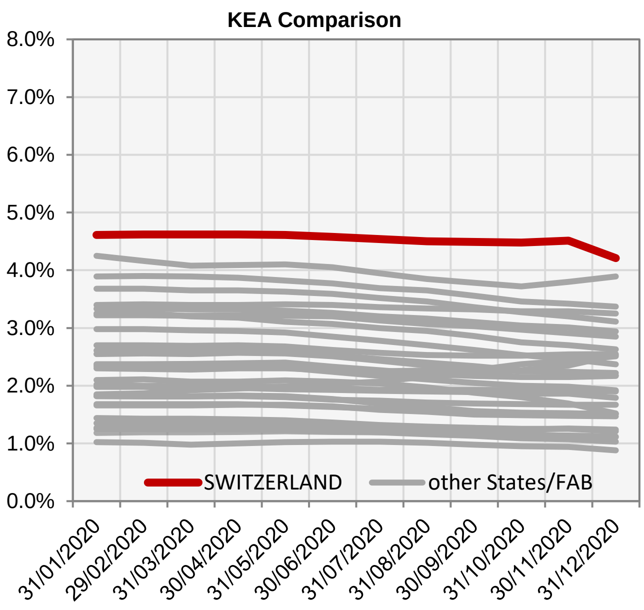
Four out of five EoSM components of the ANSP meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level, at level C. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

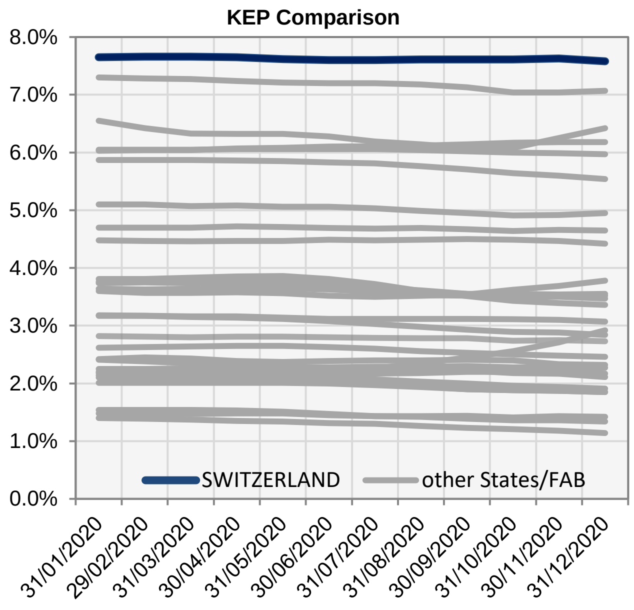
KEA	2020	2021	2022	2023	2024
Provisional target	4.78%				
Actual performance	4.21%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	4.61%	4.62%	4.62%	4.62%	4.61%	4.58%	4.54%	4.50%	4.49%	4.48%	4.51%	4.21%
KEP	7.65%	7.66%	7.66%	7.65%	7.62%	7.60%	7.60%	7.61%	7.61%	7.61%	7.63%	7.58%
KES	7.33%	7.34%	7.33%	7.31%	7.27%	7.25%	7.25%	7.25%	7.22%	7.19%	7.16%	7.08%



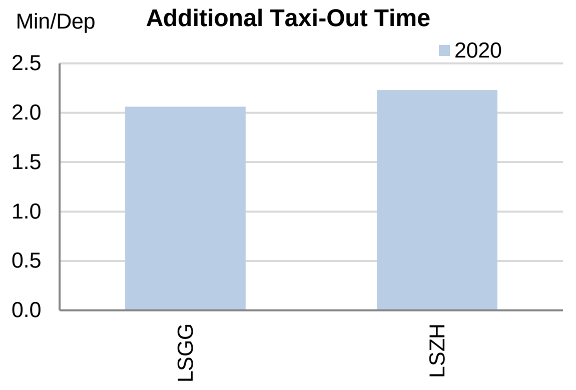


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

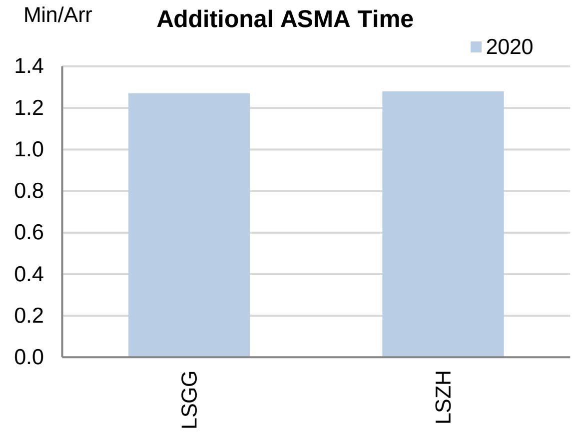
Switzerland identifies its two main airports Zurich (LSZH) and Geneva (LSGG) as subject to RP3 monitoring. Both airports have a fully implemented data flow that allows the proper monitoring of environmental indicators.
Traffic in 2020 decreased by 61% at Zurich (LSZH) compared to 2019, and by 56% at Geneva (LSGG).
Additional times drastically improved with the reduction of traffic, especially between April and June-July, with the consequent savings in CO2 emissions.

2. Additional Taxi-Out Time



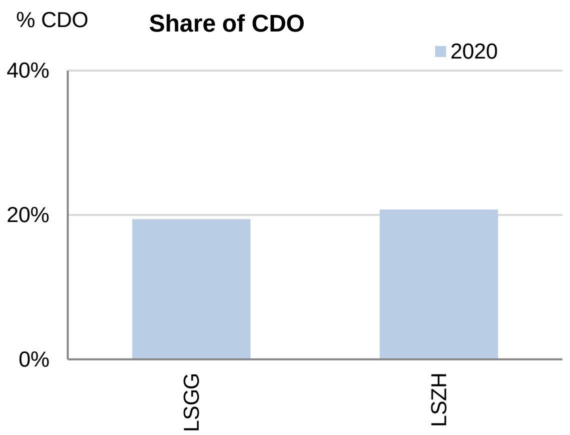
The lower traffic as of the month of April had a clear impact on the additional taxi-out times at Swiss airports.
Geneva (LSGG; 2019: 2.94 min/dep.; 2020: 2.06 min/dep.) averaged zero or nearly zero additional taxi-out times in April, May and June, and remain around 1 min/dep. the rest of the year.
Zurich (LSZH; 2019: 3.65 min/dep.; 2020: 2.23 min/dep.) averaged 1 min/dep. from April until November, resulting in an annual reduction of 39% with respect to the previous year.
According to FABEC's monitoring report, 18'200 tons of CO2 associated with the additional taxi-out times could be saved at Zurich in 2020.

3. Additional ASMA Time



Additional times in the terminal area showed an even bigger interdependence with the level of traffic, starting the year around 2.5 min/arr. for both airports, then plummeting to zero between the months of April and July, and then remained well below 1 min/arr. for the rest of the year.
At annual level Zurich (LSZH; 2019: 2.91 min/arr.; 2020: 1.28 min/arr.) shows an impressive 56% reduction, and Geneva (LSGG; 2019: 1.78 min/arr.; 2020: 1.27 min/arr.) a 29% decrease in the additional ASMA times.
According to FABEC's monitoring report, 47'900 tons of CO2 associated with the additional ASMA times could be saved at Zurich in 2020.

4. Share of arrivals applying CDO



Geneva and Zurich both have around 20% of CDO flights which is below the overall RP3 value in 2020 (32.5%).
According to FABEC's monitoring report: T*otal level-off flight time in descent flight phase has reduced from 454k minutes in 2019 to 116k minutes in 2020 which represents 52'100 tons of CO2 saved.*

5. Appendix

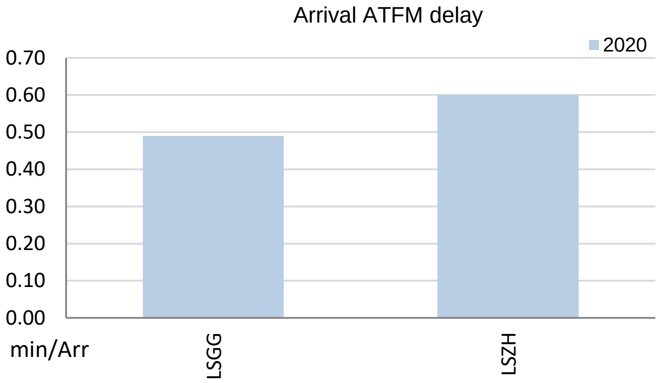
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Geneva-LSGG	2.06					1.27					19%				
Zürich-LSZH	2.23					1.28					21%				

1. Overview

Switzerland identifies its two main airports Zurich (LSZH) and Geneva (LSGG) as subject to RP3 monitoring. Both airports have a fully implemented data flow that allows the proper monitoring of the pre-departure delays.
Traffic in 2020 decreased by 61% at Zurich (LSZH) compared to 2019, and by 56% at Geneva (LSGG). This drastic drop in traffic had an impact on the ATFM regulations, with almost zero arrival ATFM delay since the month of April 2020.
Slot adherence was well above 90% for both airports.

2. Arrival ATFM Delay

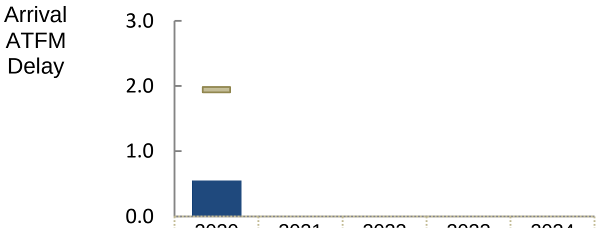


The national average arrival ATFM delay at the two Swiss airports in 2020 was 0.55 min/arr, significantly lower compared with 1.61 min/arr in 2019 (-66%).

The massive traffic drop due to the COVID-19 pandemic outbreak in Europe as from March 2020 (-59% for the whole year for Skyguide) has reduced the 2020 March - December traffic to a very low level (from -46% in March down to -93% in April).
Almost all delays took place in the first trimester at both airports.
At Zurich (LSZH: 2019: 1.99 min/arr.; 2020: 0.60 min/arr.) 77% of these delays were attributed to weather and 15% to aerodrome capacity issues.

At Geneva (LSGG: 2019: 1.04 min/arr.; 2020: 0.49 min/arr.) 65% of the delays were due to weather, 17% to aerodrome capacity and another 17% to ATC staffing issues.
The rest of the year there were minor punctual delays due to weather and staffing.

3. Arrival ATFM Delay – National Target and Incentive Scheme

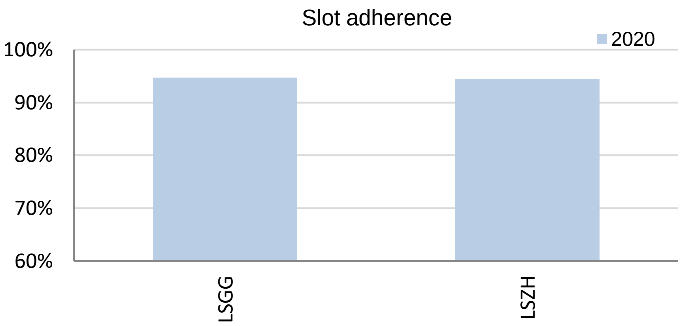


	2020	2021	2022	2023	2024
Actual	0.55				
Target	1.94				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Zurich and Geneva virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
These airports showed adherence just below 95% and the national average was 94.6%.With regard to the 5.4% of flights that did not adhere, 3.9% was early and 1.5% was late.

5. ATC Pre-departure Delay

Zurich is the only Swiss airport where this indicator can be calculated. The performance has notably improved with respect to the previous year (LSZH; 2019: 1.63 min/dep.; 2020: 0.52 min/dep.)

The share of unidentified delay reported by Geneva in 2020 has been above 40% every month since April 2020 due to the special traffic composition since then. Geneva had proper reporting before the pandemic.

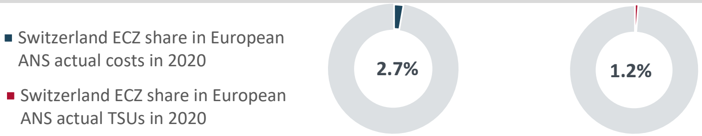
6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Geneva and Zurich in 2020 was 8.46 min/dep. and 7.55 min/dep respectively. The higher delays per flight were observed in the first trimester of the year and then in December there was again an increase at both airports.

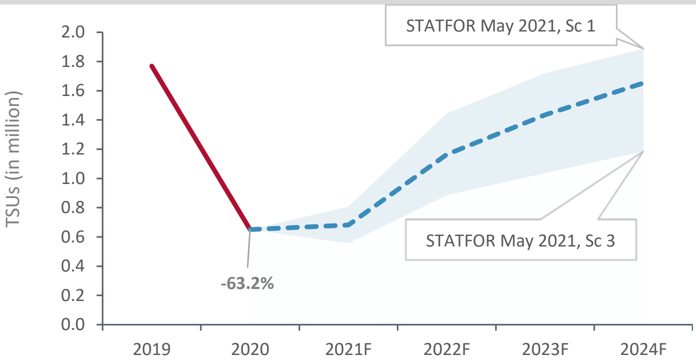
7. Appendix																				
n/a: airport operator data flow not established, or more than two months of missing / non-validated data																				
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Geneva-LSGG	0.49					94.7%					n/a					8.46				
Zürich-LSZH	0.6					94.4%					0.52					7.55				

Contextual economic information: en-route air navigation services

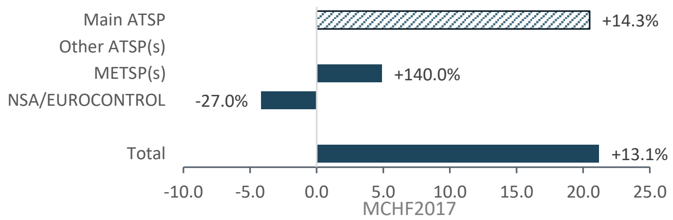
FAB:	FABEC
Main ATSP:	Skyguide
National currency:	CHF
Exchange rate:	1 EUR = 1.11124 CHF



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal CHF)	159 357 474	163 374 995	184 908 005	+16.0%	+13.2%
Inflation %	0.0%	0.4%	0.0%	0.0 p.p.	-0.4 p.p.
Real en-route costs (CHF2017)	157 791 809	161 873 775	183 058 715	+16.0%	+13.1%
Total en-route Service Units (TSUs)	647 000	1 768 952	650 488	+0.5%	-63.2%
Real en-route unit cost per Service Unit (CHF2017)	**243.88**	**91.51**	**281.42**	**+15.4%**	**+207.5%**
Real en-route unit cost per Service Unit (EUR2017)	**219.47**	**82.35**	**253.25**	**+15.4%**	**+207.5%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were significantly higher (+15.4%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+0.5%) actual TSUs and significantly higher (+16.0%) actual en-route costs in real terms.
According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-63.2%) would not be recovered by 2024.
Between 2019 and 2020, the en-route unit costs of Switzerland ECZ rose substantially (+207.5% in real terms) mainly due to the exceptional -63.2% traffic reduction. In the meantime, en-route costs significantly increased (+13.1%) in real terms.

The significantly higher en-route costs at CZ level are a combination of the following changes observed for the different entities: Skyguide - the main ATSP (+14.3%), the MET service provider (+140.0%) and the NSA/EUROCONTROL (-27.0%). It is understood that the significant increase shown for the MET service provider reflects an extraordinary one-time deduction of 2019 costs following a financial audit by the Swiss NSA. A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Skyguide en-route ANS costs (real CHF2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	101 359 081	105 101 543	120 796 849	+19.2%	+14.9%
Other operating costs	17 338 391	13 922 618	20 213 367	+16.6%	+45.2%
Depreciation	22 894 430	27 097 053	26 031 679	+13.7%	-3.9%
Cost of capital	3 310 122	4 056 067	3 691 315	+11.5%	-9.0%
Exceptional costs	0	0	0		
VFR exempted flights	-7 245 413	-7 245 413	-7 317 867	+1.0%	+1.0%
Total Skyguide en-route costs	**137 656 611**	**142 931 868**	**163 415 343**	**+18.7%**	**+14.3%**

Analysis at main ATSP level

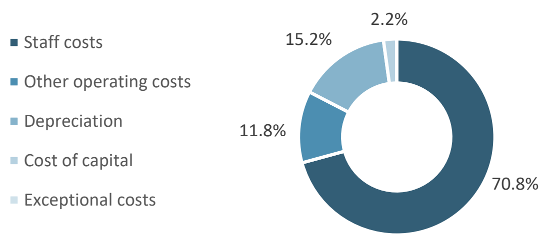
In 2020, Skyguide actual en-route costs were significantly higher (+18.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Skyguide actual 2020 en-route costs are significantly higher (+14.3%, or +20.5 MCHF2017) compared to those reported in 2019. This results from the combination of:

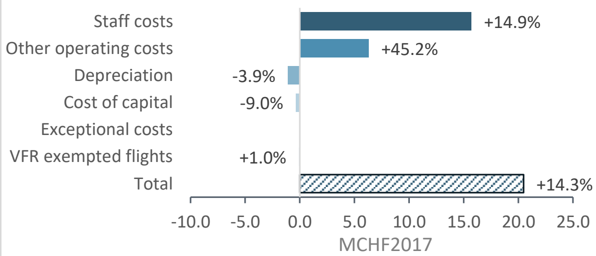
- significantly higher staff costs (+14.9%, or +15.7 MCHF2017);
- significantly higher other operating costs (+45.2%, or +6.3 MCHF2017);
- lower depreciation costs (-3.9%, or -1.1 MCHF2017);
- lower cost of capital (-9.0%, or -0.4 MCHF2017);
- slightly higher deduction for VFR exempted flights (+1.0%).

Even though the 2020 costs were higher than in 2019, Switzerland indicates that Skyguide implemented one-off savings measures on staff costs such as short time work.

Skyguide actual 2020 en-route costs by nature



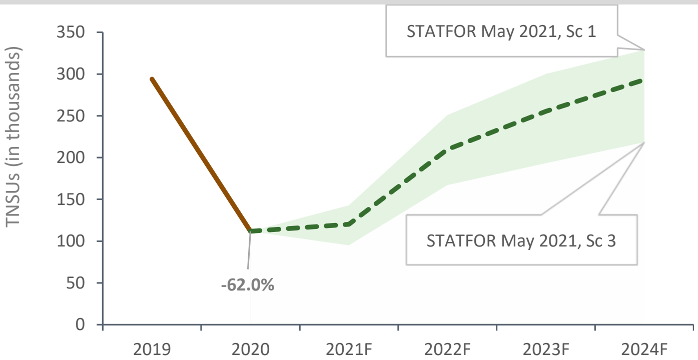
Actual costs variation by nature between 2019 and 2020



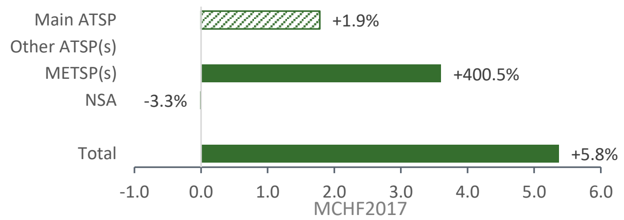
Contextual economic information: terminal air navigation services

Main ATSP:	Skyguide
National currency:	CHF
Number of airports in TCZ:	2

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal CHF)	94 165 236	99 524 185	+5.7%
Inflation %	0.4%	0.0%	-0.4 p.p.
Real terminal costs (CHF2017)	93 174 256	98 540 501	+5.8%
Total Terminal Navigation Service Units	293 928	111 807	-62.0%
Real terminal unit cost per Terminal Navigation Service Unit (CHF2017)	**317.00**	**881.34**	**+178.0%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**285.26**	**793.11**	**+178.0%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Switzerland TCZ comprises 2 airports.

Between 2019 and 2020, the terminal unit costs of Switzerland TCZ rose substantially (+178.0% in real terms) mainly due to the exceptional -62.0% traffic reduction. In the meantime, terminal costs increased (+5.8%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-62.0%) would not be recovered by 2024.

The higher terminal costs at TCZ level are a combination of the following changes observed for the different entities: Skyguide - the main ATSP (+1.9%), the MET service provider (+400.5%) and the NSA (-3.3%). It is understood that the significant increase shown for the MET service provider reflects an extraordinary one-time deduction of 2019 costs following a financial audit by the Swiss NSA. A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of Skyguide Terminal ANS costs in TCZ (real CHF2017)	2019A	2020A	2020A vs 2019A
Staff	64 523 079	55 297 814	-14.3%
Other operating costs	10 624 595	15 792 068	+48.6%
Depreciation	14 439 861	18 954 663	+31.3%
Cost of capital	2 240 736	3 566 119	+59.1%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total Skyguide terminal costs in TCZ	**91 828 272**	**93 610 663**	**+1.9%**

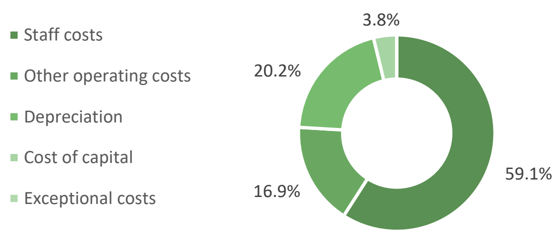
Analysis at main ATSP level

As indicated in the text box above, Skyguide actual 2020 terminal costs in TCZ are slightly higher (+1.9%, or +1.8 MCHF2017) than those reported in 2019. This results from the combination of:

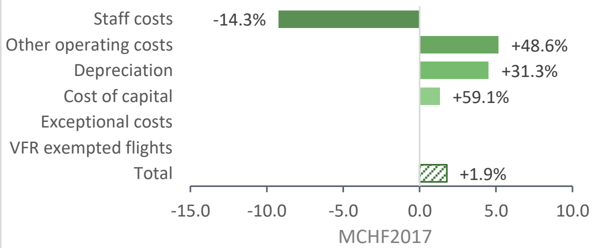
- significantly lower staff costs (-14.3%, or -9.2 MCHF2017);
- significantly higher other operating costs (+48.6%, or +5.2 MCHF2017);
- significantly higher depreciation costs (+31.3%, or +4.5 MCHF2017);
- significantly higher cost of capital (+59.1%, or +1.3 MCHF2017).

Skyguide implemented one-off savings measures on staff costs such as short time work.

Skyguide actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (CHF2017)	161 873 775	183 058 715	+13.1%
Real terminal costs (CHF2017)	93 174 256	98 540 501	+5.8%
Real gate-to-gate costs (CHF2017)	255 048 030	281 599 216	+10.4%
En-route share in gate-to-gate costs (%)	**63.5%**	**65.0%**	**+1.5 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Switzerland increased (+10.4%, or +26.6 MCHF2017) in real terms. This is a combination of an increase (+13.1%, or +21.2 MCHF2017) in en-route and higher (+5.8%, or +5.4 MCHF2017) terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (65.0%) slightly rose (+1.5 p.p.) compared to the figure reported in 2019 (63.5%).

Breakdown of Skyguide gate-to-gate ANS costs (real CHF2017)	2019A	2020A	2020A vs 2019A
Staff	169 624 622	176 094 663	+3.8%
Other operating costs	24 547 213	36 005 435	+46.7%
Depreciation	41 536 914	44 986 342	+8.3%
Cost of capital	6 296 803	7 257 434	+15.3%
Exceptional costs	0	0	
VFR exempted flights	-7 245 413	-7 317 867	+1.0%
Total Skyguide gate-to-gate costs	**234 760 139**	**257 026 006**	**+9.5%**

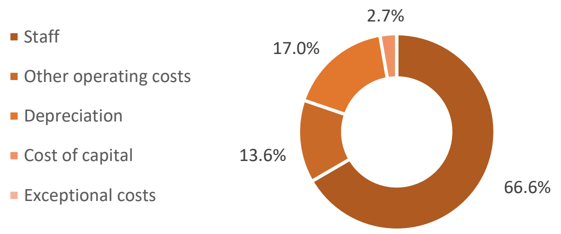
Analysis at main ATSP level

Skyguide actual 2020 gate-to-gate costs are higher (+9.5%, or +22.3 MCHF2017) than those reported in 2019. This results from the combination of:

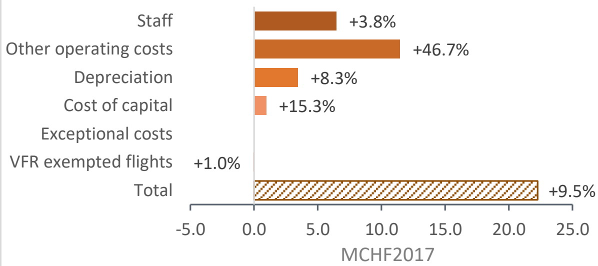
- higher staff costs (+3.8%, or +6.5 MCHF2017);
- significantly higher other operating costs (+46.7%, or +11.5 MCHF2017);
- higher depreciation costs (+8.3%, or +3.4 MCHF2017);
- significantly higher cost of capital (+15.3%, or +1.0 MCHF2017);
- slightly higher deduction for VFR exempted flights (+1.0%).

Details on the drivers behind the changes observed above are provided in the respective analyses of Skyguide at en-route and terminal charging zone level.

Skyguide actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Switzerland

Annual Monitoring Report 2020

Local level view

Finland

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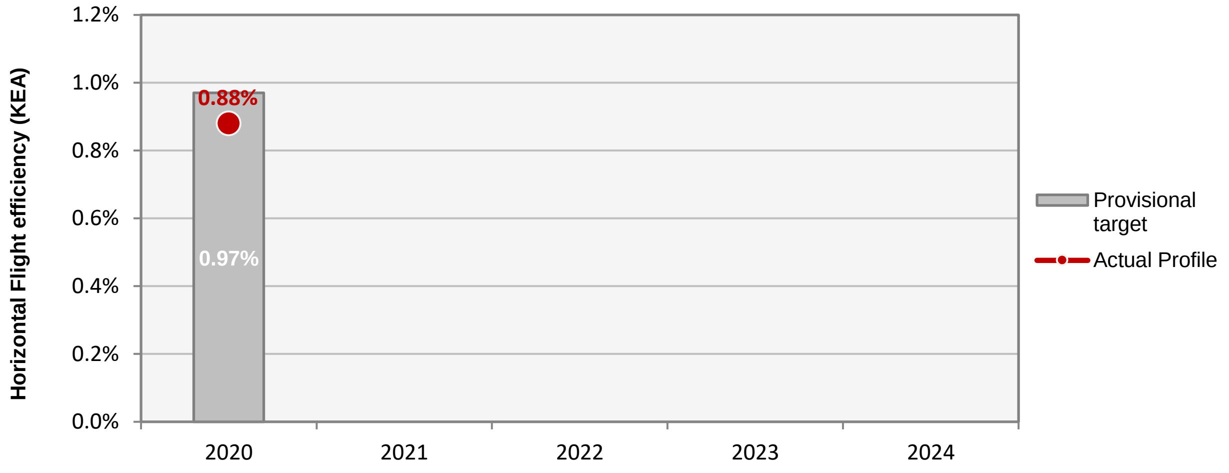
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
ANS	87	C	C	C	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

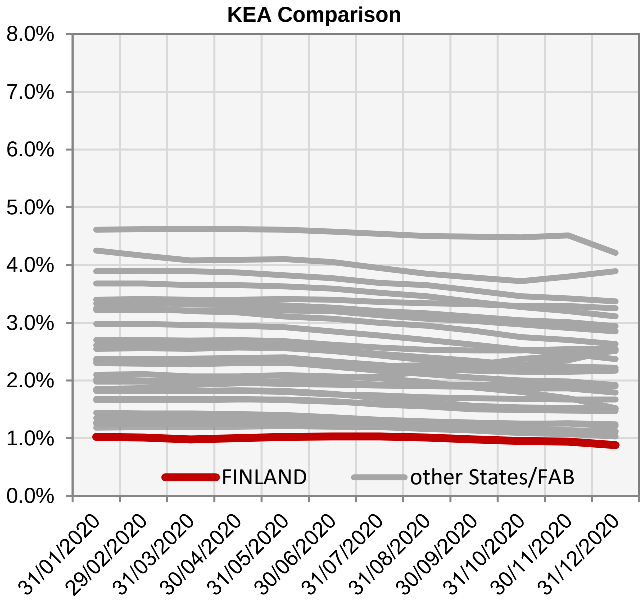
Four out of five EoSM components of the ANSP meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

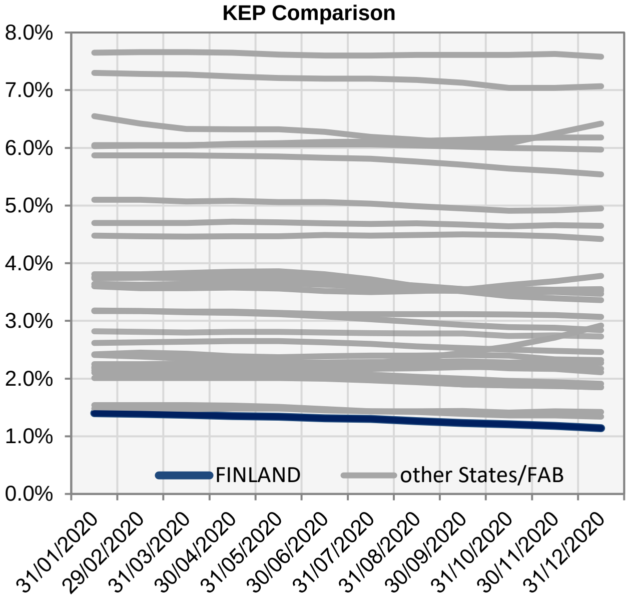
KEA	2020	2021	2022	2023	2024
Provisional target	0.97%				
Actual performance	0.88%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.02%	1.01%	0.98%	1.00%	1.02%	1.03%	1.03%	1.01%	0.98%	0.95%	0.94%	0.88%
KEP	1.40%	1.39%	1.37%	1.35%	1.34%	1.31%	1.30%	1.26%	1.23%	1.21%	1.18%	1.14%
KES	1.25%	1.25%	1.23%	1.21%	1.19%	1.17%	1.15%	1.11%	1.07%	1.05%	1.03%	1.01%



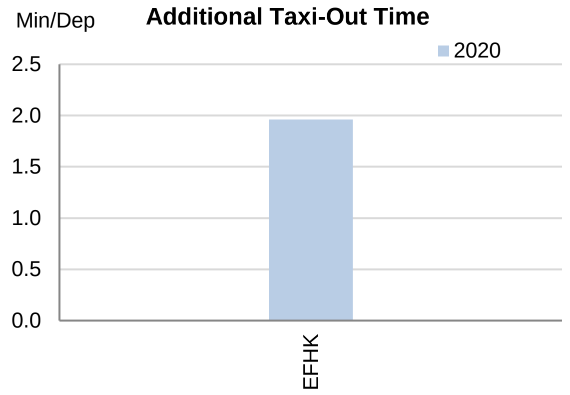


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Finland identifies only Helsinki airport as subject to RP3 monitoring.
The Airport Operator Data Flow is fully established and the monitoring of all environmental indicators can be performed.
Traffic at this airport in 2020 decreased by 63% with respect to 2019. Both additional time indicators improved with respect to 2019 in different proportion, and were zero or nearly zero in the summer months.
The share of CDO flights is in the higher range of all observed values in 2020.

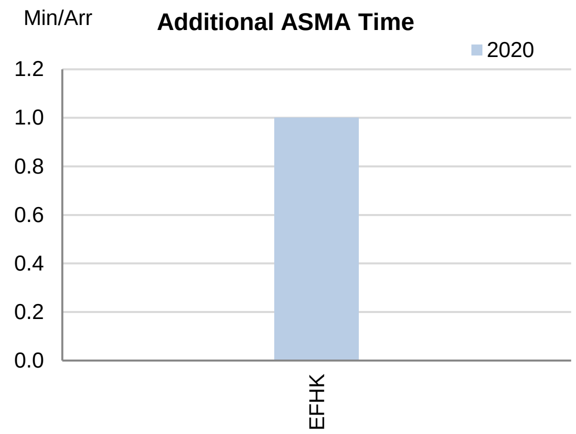
2. Additional Taxi-Out Time



Additional taxi-out times at Helsinki (EFHK; 2019: 3.04 min/dep.; 2020: 1.96 min/dep.) are very influenced by the winter operations (winter maintenance and de-icing procedures), but the impact of these winter operations was much lower than in 2019. Interestingly, although the biggest drop in traffic was observed during April to June, the additional taxi out times were at the lowest from August to October.

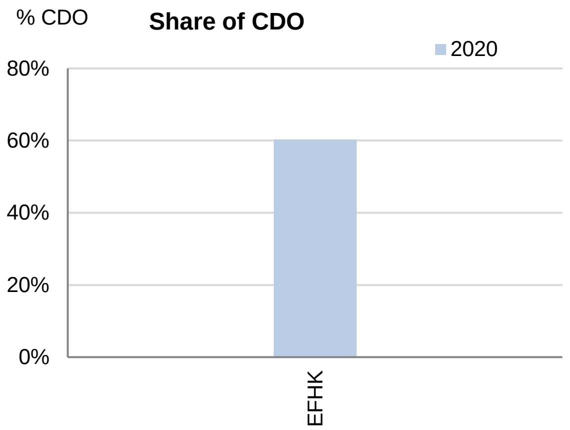
According to the Finland's monitoring report:
During 2020 with reduced traffic, the closest runway to the terminal building was closed in order to reduce noise emissions, and this was affecting the taxi-out times.

3. Additional ASMA Time



The additional times in the terminal airspace also decreased in 2020 (EFHK; 2019: 1.19 min/arr.; 2020: 1 min/arr.) but in a smaller proportion compared to the additional taxi-out times or the additional ASMA times at other European airports.
The biggest reduction was observed from June to August, when these times were practically zero.

4. Share of arrivals applying CDO



The share of CDO flights at Helsinki (EFHK) is 60.2% which is well above the overall RP3 value in 2020 (32.5%) and in the higher range of all observed values in 2020.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Helsinki - Vantaa-EFHK	1.96					1					60%				

Update on Military dimension of the plan

No comment provided.

Military - related measures implemented or planned to improve capacity

Nil

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Finland	41%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Helsinki	41%				

Initiatives implemented or planned to improve PI#6

Nil

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Finland	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Helsinki	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Finland	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Helsinki	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay

	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.09					
Actual performance	0.00					

NSA's assessment of capacity performance

The traffic dropped significantly over the year due to COVID-19 pandemic. The en-route ATFM delay has been 0 for many years. During RP3 planning, airspace user demand was to keep the delays as low as possible, and ANSP has achieved the target of this KPI.

Monitoring process for capacity performance

Review of the actual values from the NM dashboard.

Capacity Planning

ANSP is expected to continue this good trend on en-route ATFM delay.

ATCO in OPS (FTE)

	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	52	53					
Planned monitoring report		47					
Actual	47	32					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The Finland FIR experienced a traffic reduction of 58% from 2019 levels, to 119k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

En route Capacity Incentive Scheme

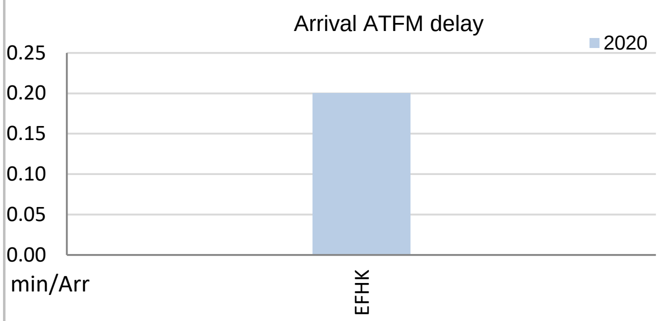
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.05					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Finland identifies only Helsinki airport as subject to RP3 monitoring.
The Airport Operator Data Flow is fully established and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at this airport in 2020 decreased by 63% with respect to 2019. Arrival ATFM delays were observed only in the first trimester and slot adherence was well above 90%.

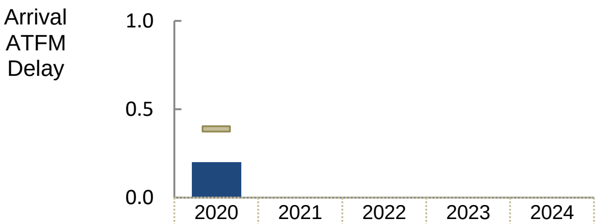
2. Arrival ATFM Delay



The average arrival ATFM delay at Helsinki in 2020 was 0.20 min/arr, 47% less than the 0.37 min/arr observed in 2019.

The terminal ANS ATFM delay target was achieved, and the 0,20 actual values were caused by weather causes. The delays were only in winter months (January-February-March) and after significant drop in traffic, the terminal delays dropped to zero for the rest of the year.

3. Arrival ATFM Delay – National Target and Incentive Scheme

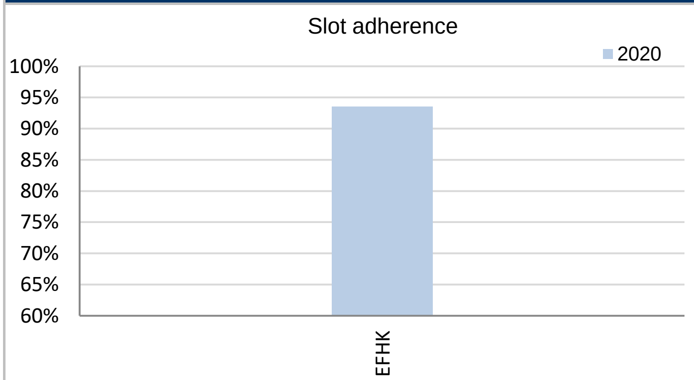


	2020	2021	2022	2023	2024
Actual	0.20				
Target	0.39				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Helsinki also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Helsinki's ATFM slot compliance was 93.6%. With regard to the 6.4% of flights that did not adhere, 2.4% was early and 4% was late.
Finnish NSA reports: *Slot adherence remained on a similar level with 2019 (93,9%) and was better than all other years in RP2 (2015-2018). ANSP updated internal documentation (instructions) related to flow management in ATS units in December 2019, and this might have effect on this PI.*

5. ATC Pre-departure Delay

The quality of the airport data reported by Helsinki is too low, preventing the calculation of this indicator.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Helsinki.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)
To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Helsinki was above 40% for 5 months in 2020, preventing the annual calculation of this indicator. Helsinki usually has proper reporting, and the issue those months is likely to be due to the special traffic composition.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Helsinki in 2020 was 7.76 min/dep. The higher delays per flight were observed in April, due to the lower traffic and extraordinary circumstances.

This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

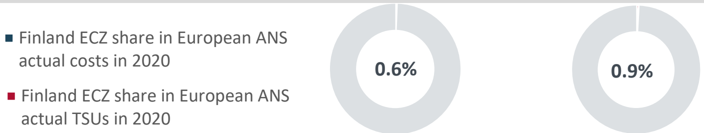
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

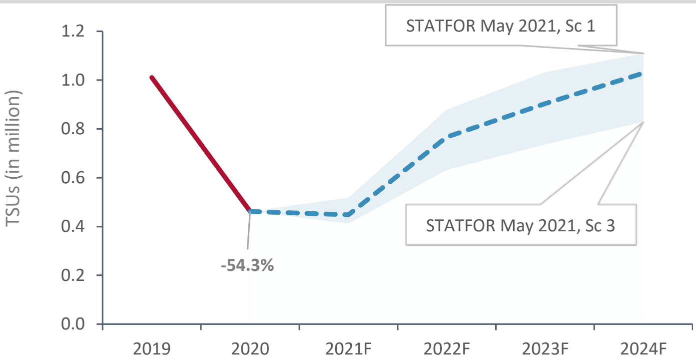
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Helsinki - Vantaa-EFHK	0.2					93.6%					n/a					7.76				

Contextual economic information: en-route air navigation services

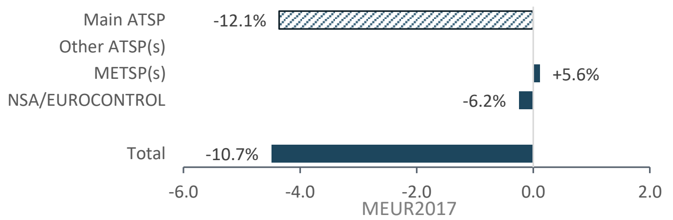
FAB:	NEFAB
Main ATSP:	Fintraffic ANS
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	40 230 541	42 772 708	38 293 391	-4.8%	-10.5%
Inflation %	0.7%	1.1%	0.4%	-0.3 p.p.	-0.7 p.p.
Real en-route costs (EUR2017)	39 273 692	41 978 589	37 487 830	-4.5%	-10.7%
Total en-route Service Units (TSUs)	436 000	1 010 679	462 058	+6.0%	-54.3%
Real en-route unit cost per Service Unit (EUR2017)	**90.08**	**41.54**	**81.13**	**-9.9%**	**+95.3%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-9.9%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+6.0%) actual TSUs and lower (-4.5%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-54.3%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Finland ECZ rose substantially (+95.3% in real terms) mainly due to the exceptional -54.3% traffic reduction. In the meantime, en-route costs significantly reduced (-10.7%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: Fintraffic ANS - the main ATSP (-12.1%), the MET service provider (+5.6%) and the NSA/EUROCONTROL (-6.2%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Fintraffic ANS en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	18 382 970	21 000 223	17 504 496	-4.8%	-16.6%
Other operating costs	10 689 299	11 303 527	9 944 316	-7.0%	-12.0%
Depreciation	3 427 214	3 131 000	3 380 059	-1.4%	+8.0%
Cost of capital	599 348	547 000	794 015	+32.5%	+45.2%
Exceptional costs	0	0	0		
VFR exempted flights	-1 941	-1 955	-1 947	+0.3%	-0.4%
Total Fintraffic ANS en-route costs	**33 096 890**	**35 979 795**	**31 620 938**	**-4.5%**	**-12.1%**

Analysis at main ATSP level

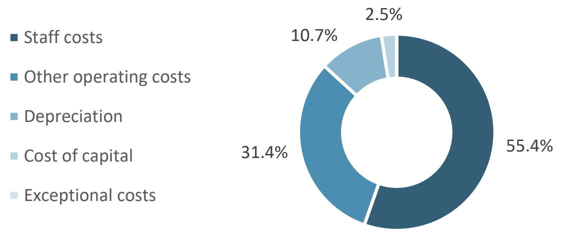
In 2020, Fintraffic ANS actual en-route costs were lower (-4.5%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Fintraffic ANS actual 2020 en-route costs are significantly lower (-12.1%, or -4.4 MEUR2017) compared to those reported in 2019. This results from the combination of:

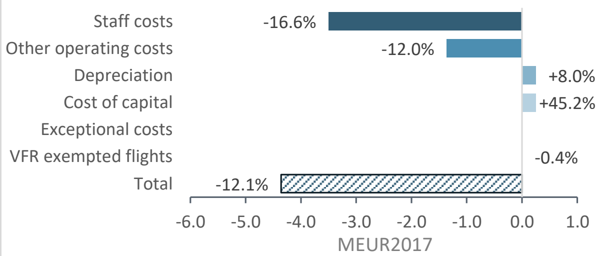
- significantly lower staff costs (-16.6%, or -3.5 MEUR2017);
- significantly lower other operating costs (-12.0%, or -1.4 MEUR2017);
- higher depreciation costs (+8.0%, or +0.2 MEUR2017);
- significantly higher cost of capital (+45.2%, or +0.2 MEUR2017);
- relatively stable deduction for VFR exempted flights (-0.4%).

Fintraffic ANS achieved savings through temporary lay-offs, abandoning bonuses, travel costs and payments to airport operator Finavia. On the other hand, capital related costs were higher due to the implementation of major investments (ATM-system TopSky, MSSR upgrades, etc.) landing to a higher asset base. In addition, a higher return on equity was used to compute the cost of capital.

Fintraffic ANS actual 2020 en-route costs by nature

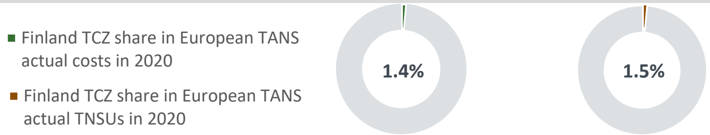


Actual costs variation by nature between 2019 and 2020

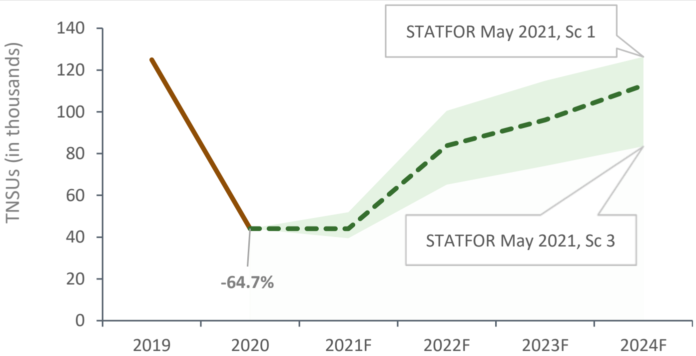


Contextual economic information: terminal air navigation services

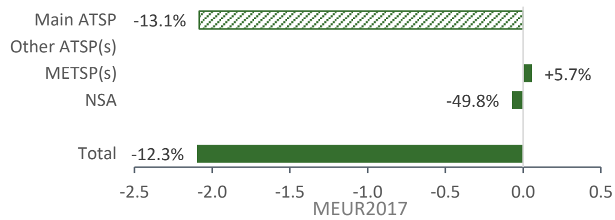
Main ATSP:	Fintraffic ANS
National currency:	EUR
Number of airports in TCZ:	1



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	17 405 400	15 315 764	-12.0%
Inflation %	1.1%	0.4%	-0.7 p.p.
Real terminal costs (EUR2017)	17 031 424	14 933 866	-12.3%
Total Terminal Navigation Service Units	124 927	44 088	-64.7%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**136.33**	**338.73**	**+148.5%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Finland TCZ comprises only Helsinki-Vantaa airport.

Between 2019 and 2020, the terminal unit costs of Finland TCZ rose substantially (+148.5% in real terms) mainly due to the exceptional -64.7% traffic reduction. In the meantime, terminal costs significantly reduced (-12.3%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-64.7%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: Fintraffic ANS - the main ATSP (-13.1%), the MET service provider (+5.7%) and the NSA (-49.8%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of Fintraffic ANS Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	9 370 247	7 780 394	-17.0%
Other operating costs	5 805 702	5 176 489	-10.8%
Depreciation	614 000	623 018	+1.5%
Cost of capital	107 000	211 118	+97.3%
Exceptional costs	0	0	
VFR exempted flights	-22 480	0	-100.0%
Total Fintraffic ANS terminal costs in TCZ	**15 874 470**	**13 791 019**	**-13.1%**

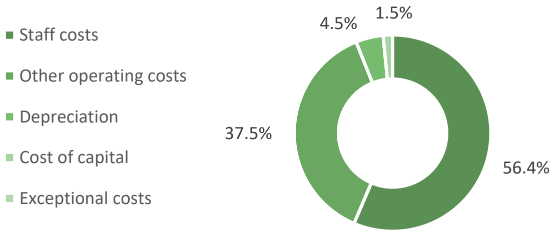
Analysis at main ATSP level

As indicated in the text box above, Fintraffic ANS actual 2020 terminal costs in TCZ are significantly lower (-13.1%, or -2.1 MEUR2017) than those reported in 2019. This results from the combination of:

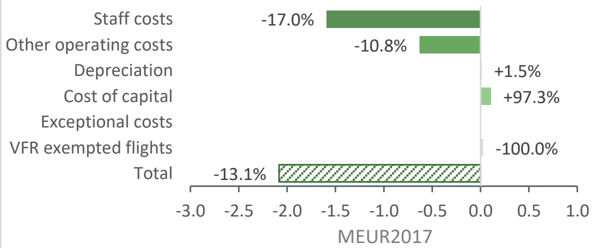
- significantly lower staff costs (-17.0%, or -1.6 MEUR2017);
- significantly lower other operating costs (-10.8%, or -0.6 MEUR2017);
- slightly higher depreciation costs (+1.5%, or +0.0 MEUR2017);
- significantly higher cost of capital (+97.3%, or +0.1 MEUR2017);
- no deduction for VFR exempted flights in 2020.

Fintraffic ANS achieved savings through temporary lay-offs, abandoning bonuses, travel costs and payments to airport operator Finavia. A higher return on equity was used to compute the cost of capital.

Fintraffic ANS actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	41 978 589	37 487 830	-10.7%
Real terminal costs (EUR2017)	17 031 424	14 933 866	-12.3%
Real gate-to-gate costs (EUR2017)	59 010 013	52 421 696	-11.2%
En-route share in gate-to-gate costs (%)	**71.1%**	**71.5%**	**+0.4 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Finland decreased (-11.2%, or -6.6 MEUR2017) in real terms. This is a combination of a reduction (-10.7%, or -4.5 MEUR2017) in en-route and a decrease (-12.3%, or -2.1 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (71.5%) slightly rose (+0.4 p.p.) compared to the figure reported in 2019 (71.1%).

Breakdown of Fintraffic ANS gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	30 370 470	25 284 890	-16.7%
Other operating costs	17 109 229	15 120 805	-11.6%
Depreciation	3 745 000	4 003 077	+6.9%
Cost of capital	654 000	1 005 132	+53.7%
Exceptional costs	0	0	
VFR exempted flights	-24 435	-1 947	-92.0%
Total Fintraffic ANS gate-to-gate costs	**51 854 265**	**45 411 957**	**-12.4%**

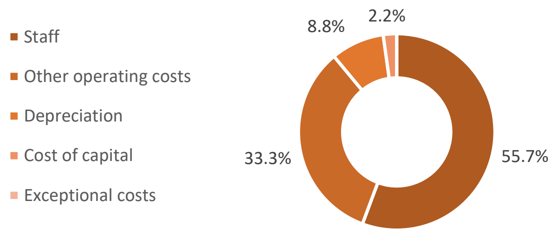
Analysis at main ATSP level

Fintraffic ANS actual 2020 gate-to-gate costs are lower (-12.4%, or -6.4 MEUR2017) than those reported in 2019. This results from the combination of:

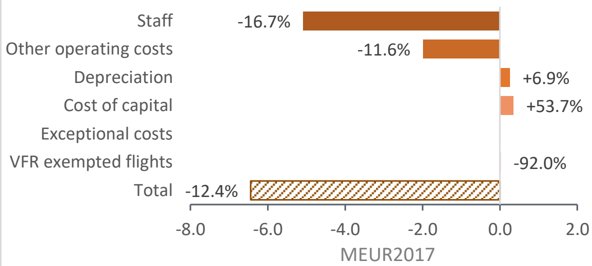
- significantly lower staff costs (-16.7%, or -5.1 MEUR2017);
- lower other operating costs (-11.6%, or -2.0 MEUR2017);
- higher depreciation costs (+6.9%, or +0.3 MEUR2017);
- significantly higher cost of capital (+53.7%, or +0.4 MEUR2017);
- significantly lower deduction for VFR exempted flights (-92.0%).

Details on the drivers behind the changes observed above are provided in the respective analyses of Finavia at en-route and terminal charging zone level.

Fintraffic ANS actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Finland

Annual Monitoring Report 2020
Local level view
Greece

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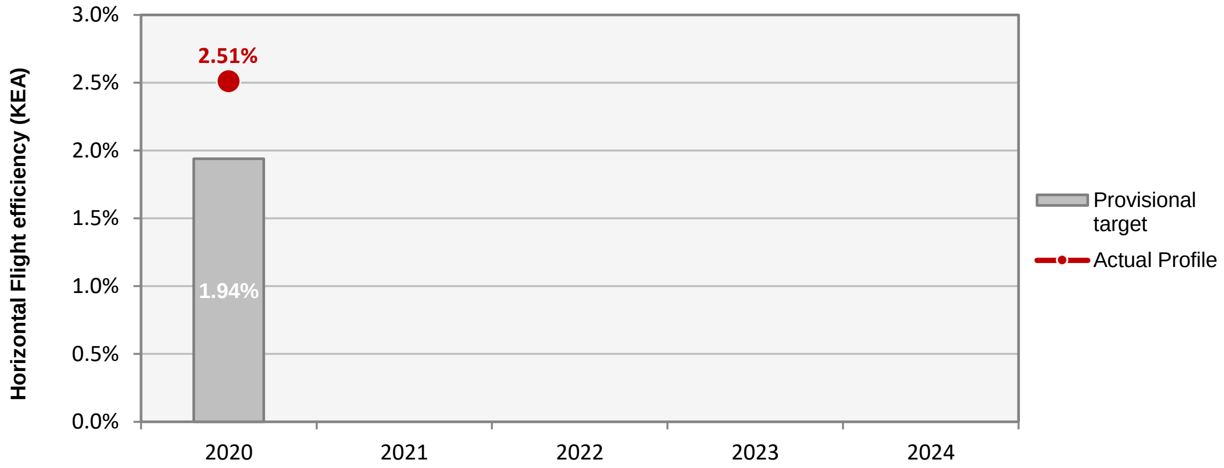
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
HANSP	77	B	B	B	B	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence and as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

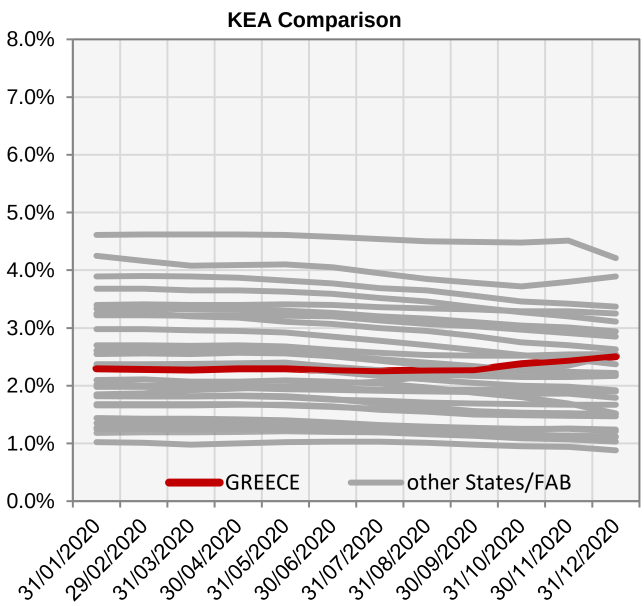
One out of five EoSM components of the ANSP meet the 2024 target level, namely "Safety Promotion". The other four are below 2024 target levels and are expected to improve in the next years of RP3. Particular attention should be devoted to improve safety risk management component, which is tow maturity levels below target.

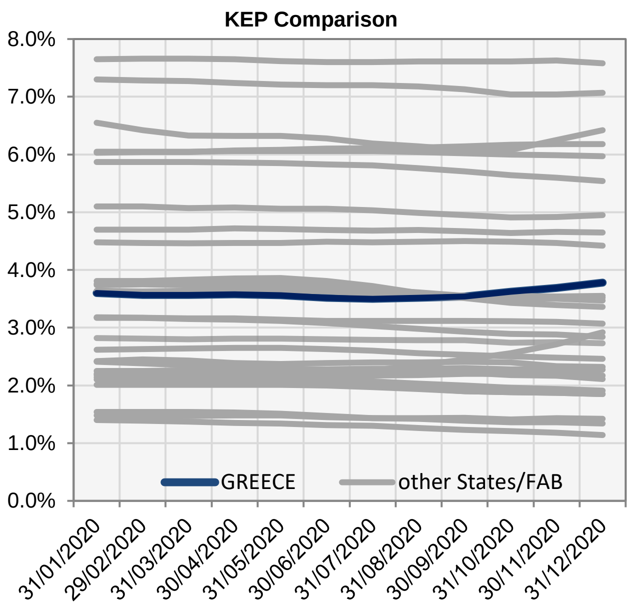
KEA	2020	2021	2022	2023	2024
Provisional target	1.94%				
Actual performance	2.51%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.30%	2.29%	2.28%	2.30%	2.30%	2.27%	2.25%	2.26%	2.27%	2.37%	2.43%	2.51%
KEP	3.60%	3.57%	3.57%	3.58%	3.56%	3.52%	3.50%	3.52%	3.54%	3.62%	3.69%	3.78%
KES	3.09%	3.07%	3.08%	3.11%	3.09%	3.06%	3.04%	3.04%	3.03%	3.08%	3.12%	3.16%





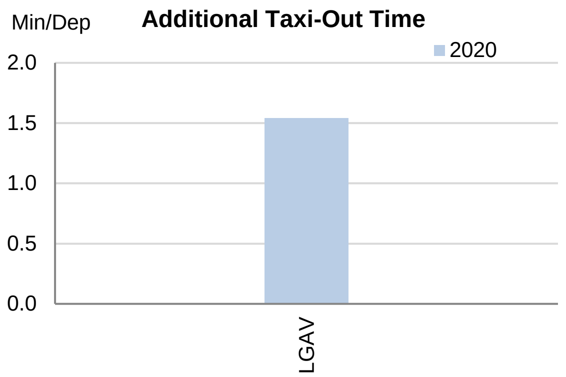
The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Operational ANS performance at airports is monitored for one airport in Greece (i.e. Athens (LGAV)), the only airport subject to RP3 monitoring. The Airport Operator Data Flow is fully established and the monitoring of all environmental indicators can be performed.

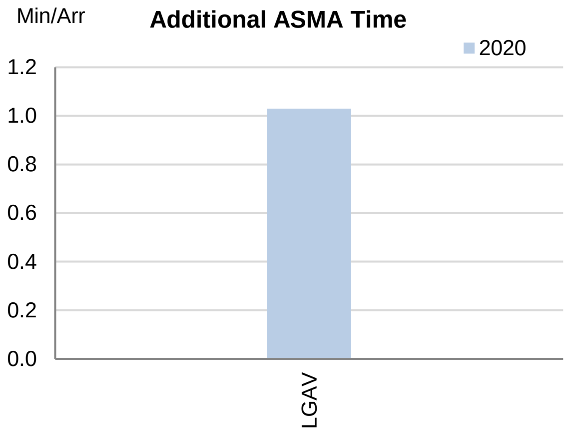
Traffic at Athens in 2020 decreased by 51% with respect to 2019, significantly less than at other European airports, where the impact of COVID has generally been higher.
Both additional time indicators improved with respect to 2019 in different proportion, with additional taxi-out times about half of the values in 2019 while the additional ASMA times only decreased by 21%.
The share of CDO flights is relatively high compared to other airports monitored in RP3.

2. Additional Taxi-Out Time



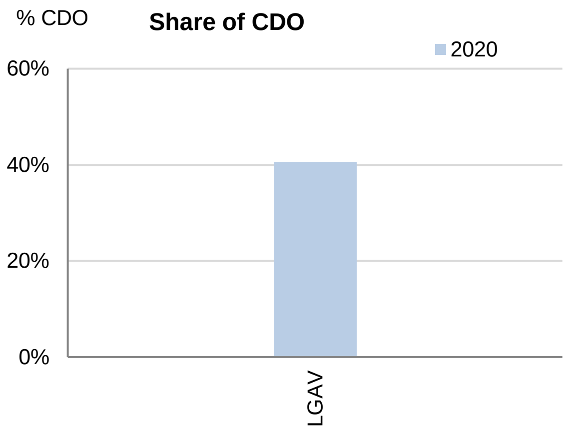
Additional taxi-out times at Athens (LGAV: 2019: 2.61 min/dep.; 2020: 1.54 min/dep.) lowered by 41%, driven mainly by the performance in April, May and June, when they averaged about 1 min/dep.
In July and October however these times were considerably worse, around the 2 min/dep.

3. Additional ASMA Time



The additional times in the terminal airspace also decreased in 2020 (LGAV; 2019: 1.30 min/arr.; 2020: 1.03 min/arr.) but in a smaller proportion compared to the additional taxi-out times or the additional ASMA times at other European airports.
In October 2020 and despite the much lower traffic, these additional times were even higher than any other month in 2019, averaging 1.73 min/arr.

4. Share of arrivals applying CDO



The share of CDO flights at Athinai/Eleftherios Venizelos (LGAV) is 40.6% which is above the overall RP3 value in 2020 (32.5%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Athens-LGAV	1.54					1.03					41%				

Update on Military dimension of the plan

Environment: Airspace design reorganizes the airspace structure in order to decrease aircraft emissions and noise, therefore implementing certain airspace structures (FRA, TSA/TRA, torte case, etc.) airspace connectivity, as well as certain regulations for controlling emissions (having in mind i.e. that the average age of the military fleet is 21 years versus 13 years for the commercial fleet) will affect the impact of military dimension on the environment KPA.

Capacity: Airspace design provides a more integrated management of the airspace, without the limitations of national borders, in order to maximise capacity through initiatives such as Flexible Use of Airspace, harmonisation of airspace categories and free routing, starting with upper airspace above a certain altitude and continuing in stages to optimise capacity.

Military - related measures implemented or planned to improve capacity

Environment: Implementation of FRA, implementation of TSA/TRA and certain procedures for flexible use of airspace.

Capacity: Classification of airspace (according to the needs), implementation of FRA, implementation of certain TSA/TRA for specific military use. Reorganization of airspace structures for capacity optimization.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Greece	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Athens	N/A				
Makedonia	N/A				

Initiatives implemented or planned to improve PI#6

Relevant actions by HANSA to be decided (if necessary) after evaluation of all parameters including the effect of the pandemic specifically for 2020.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Greece	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Athens	N/A				
Makedonia	N/A				

Initiatives implemented or planned to improve PI#7

Relevant actions by HANSA to be decided (if necessary) after evaluation of all parameters including the effect of the pandemic specifically for 2020.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Greece	N/A				

PI#8 Rate of using available airspace structures (per ACC)					
Ratio PI#8	**2020**	**2021**	**2022**	**2023**	**2024**
Athens	N/A				
Makedonia	N/A				

Initiatives implemented or planned to improve PI#8

Relevant actions by HANSA to be decided (if necessary) after evaluation of all parameters including the effect of the pandemic specifically for 2020.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.34					
Actual performance	0.02					

NSA's assessment of capacity performance

No comment provided.

Monitoring process for capacity performance

No comment provided.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	230	285					Regarding 2020, due to the COVID 19 crisis the recruitment plan was amended. 20 ATCOs left in 2019 and 22 more left in 2020.
Actual	214	194					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Greece experienced a traffic reduction of 57% from 2019 levels, to 383k flights. The traffic level was accommodated with less than 6k minutes en route ATFM delays to airspace users, all of which were attributed to ATC industrial action in October 2020.

En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National target	0.34					
Deadband +/-						
Actual	0.02					

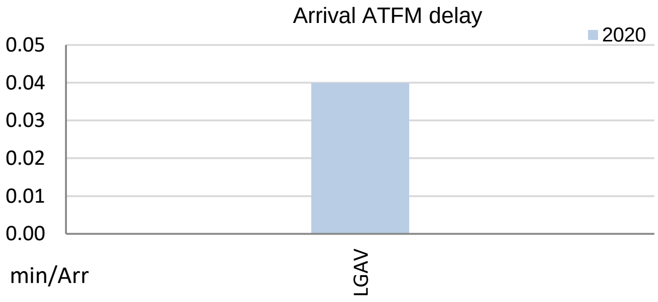
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Operational ANS performance at airports is monitored for one airport in Greece (i.e. Athens (LGAV)), the only airport subject to RP3 monitoring. The Airport Operator Data Flow is fully established and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.

Traffic at Athens in 2020 decreased by 51% with respect to 2019, significantly less than at other European airports, where the impact of COVID has generally been higher. The arrival ATFM delays showed a 99% reduction with respect to the previous year, with delays only in July and October. Slot adherence was well above 90%.

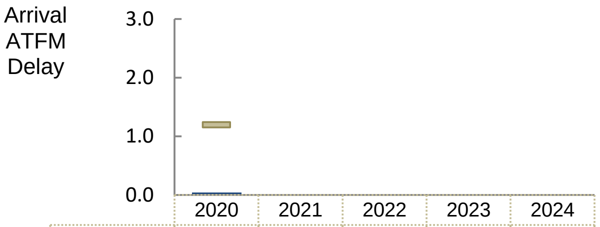
2. Arrival ATFM Delay



The average arrival ATFM delay at Athens in 2020 was 0.04 min/arr, drastically lower compared with 3.57 min/arr in 2019 (-99%).

Delays were only observed in July and October, and they were attributed to aerodrome capacity (61%) and ATC capacity (39%) despite the lower traffic.

3. Arrival ATFM Delay – National Target and Incentive Scheme

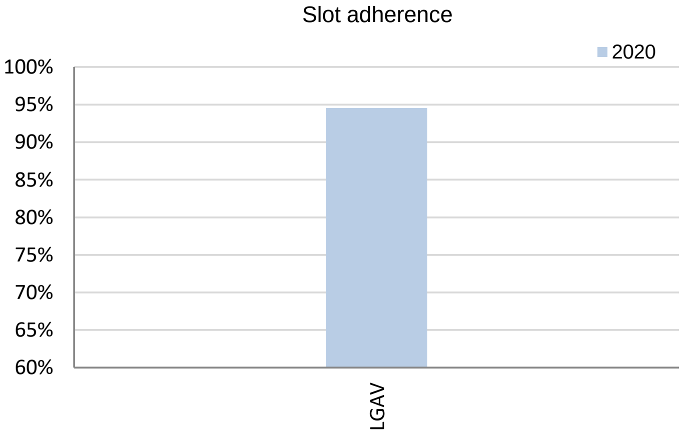


	2020	2021	2022	2023	2024
Actual	0.04				
Target	1.20				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



The share of regulated departures from Athens in the first trimester was already low (around 5%) but with the drastic drop in traffic, regulated departures virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Athens's ATFM slot compliance was 94.5%. With regard to the 5.5% of flights that did not adhere, 3.7% was early and 1.8% was late.

Greek NSA reports: *Performance in relation to the previous year remained almost at the same level, slightly improving (94,5% in 2020 compared to 93.3.%in 2019). Further details will be provided in due time, if necessary, after the completion of relevant consultation with the Provider and the evaluation of the collected data.*

5. ATC Pre-departure Delay

The quality of the airport data reported by Athens airport is too low, preventing the calculation of this indicator.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Athens.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Athens was above 40% since April 2020, preventing the calculation of this indicator, due to the special traffic composition. Athens had proper reporting before the pandemic.

The Greek NSA reports that this issue is *under consultation with the Provider. Further information will provided in due time, after the collection and evaluation of all relevant data.*

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Athens in 2020 was 8 min/dep. with little variation throughout the year. This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

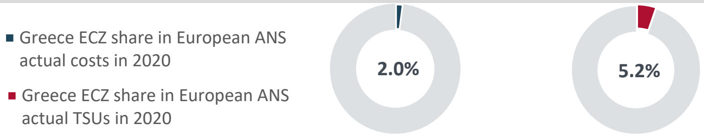
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

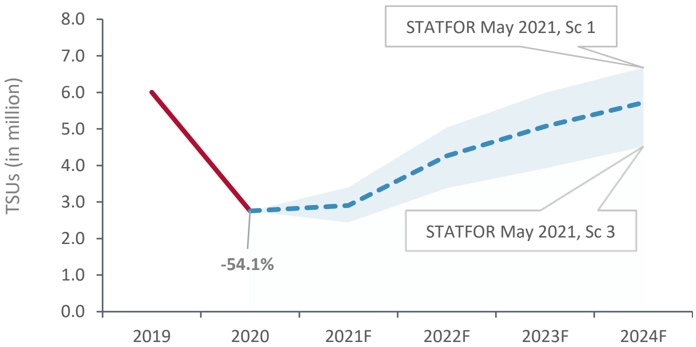
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Athens-LGAV	0.04					94.5%					n/a					8.00				

Contextual economic information: en-route air navigation services

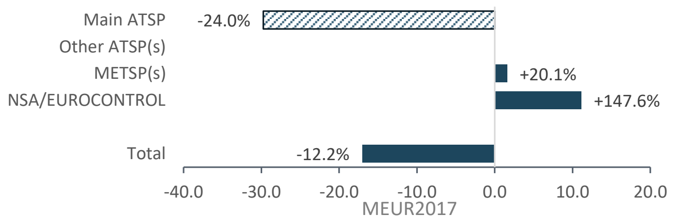
FAB:	BLUE MED FAB
Main ATSP:	HCAA
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	143 784 194	140 959 155	123 591 976	-14.0%	-12.3%
Inflation %	0.0%	0.5%	0.0%	0.0 p.p.	-0.5 p.p.
Real en-route costs (EUR2017)	142 246 804	139 316 207	122 295 962	-14.0%	-12.2%
Total en-route Service Units (TSUs)	2 654 000	6 004 800	2 755 521	+3.8%	-54.1%
Real en-route unit cost per Service Unit (EUR2017)	**53.60**	**23.20**	**44.38**	**-17.2%**	**+91.3%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were significantly lower (-17.2%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+3.8%) actual TSUs and significantly lower (-14.0%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-54.1%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Greece ECZ rose substantially (+91.3% in real terms) mainly due to the exceptional -54.1% traffic reduction. In the meantime, en-route costs significantly reduced (-12.2%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: HCAA - the main ATSP (-24.0%), the MET service provider (+20.1%) and the NSA/EUROCONTROL (+147.6%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of HCAA en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	89 331 668	104 564 277	78 853 441	-11.7%	-24.6%
Other operating costs	17 768 301	14 969 581	12 603 986	-29.1%	-15.8%
Depreciation	1 800 424	3 646 842	1 335 310	-25.8%	-63.4%
Cost of capital	2 022 071	1 122 276	1 643 705	-18.7%	+46.5%
Exceptional costs	0	0	0		
VFR exempted flights	-404 722	-493 564	-379 654	-6.2%	-23.1%
Total HCAA en-route costs	**110 517 742**	**123 809 412**	**94 056 788**	**-14.9%**	**-24.0%**

Analysis at main ATSP level

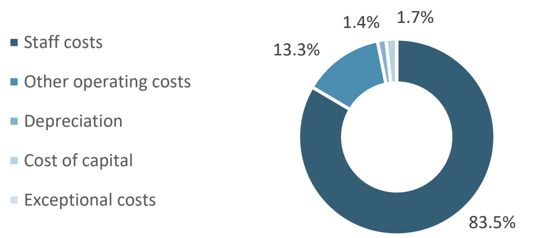
In 2020, HCAA actual en-route costs were significantly lower (-14.9%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, HCAA actual 2020 en-route costs are significantly lower (-24.0%, or -29.8 MEUR2017) compared to those reported in 2019. This results from the combination of:

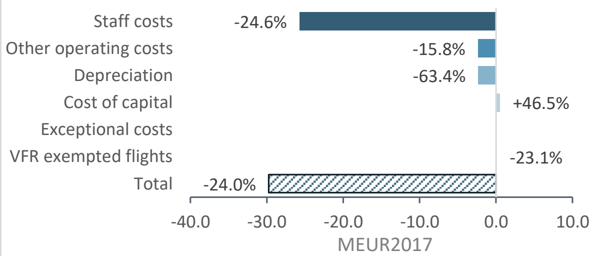
- significantly lower staff costs (-24.6%, or -25.7 MEUR2017);
- significantly lower other operating costs (-15.8%, or -2.4 MEUR2017);
- significantly lower depreciation costs (-63.4%, or -2.3 MEUR2017);
- significantly higher cost of capital (+46.5%, or +0.5 MEUR2017);
- significantly lower deduction for VFR exempted flights (-23.1%).

Cost-containment measures implemented by HCAA reflected mainly the amendment of the ATCO recruitment plan, the reduction of staff costs linked with the evolution of traffic and other non-essential expenses such as travel expenses.

HCAA actual 2020 en-route costs by nature

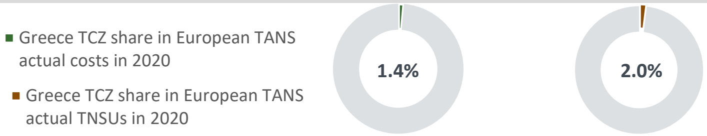


Actual costs variation by nature between 2019 and 2020

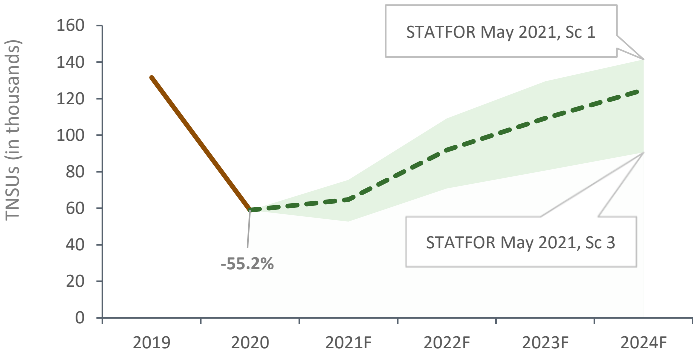


Contextual economic information: terminal air navigation services

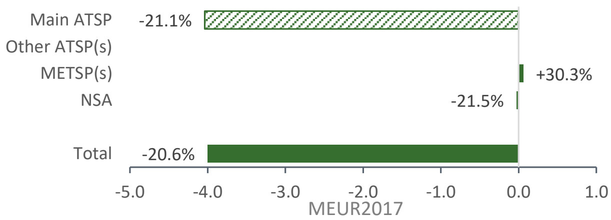
Main ATSP:	HCAA
National currency:	EUR
Number of airports in TCZ:	1



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	19 707 434	15 654 397	-20.6%
Inflation %	0.5%	0.0%	-0.5 p.p.
Real terminal costs (EUR2017)	19 456 716	15 457 426	-20.6%
Total Terminal Navigation Service Units	131 553	59 000	-55.2%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**147.90**	**261.99**	**+77.1%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Greece TCZ comprises only Athinai Eleftherios Venizelos airport.

Between 2019 and 2020, the terminal unit costs of Greece TCZ rose substantially (+77.1% in real terms) mainly due to the exceptional -55.2% traffic reduction. In the meantime, terminal costs significantly reduced (-20.6%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-55.2%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: HCAA - the main ATSP (-21.1%), the MET service provider (+30.3%) and the NSA (-21.5%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of HCAA Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	12 885 358	10 797 227	-16.2%
Other operating costs	6 164 078	4 246 453	-31.1%
Depreciation	77 258	39 271	-49.2%
Cost of capital	41 209	225 556	+447.3%
Exceptional costs	0	0	
VFR exempted flights	-28 627	-207 085	+623.4%
Total HCAA terminal costs in TCZ	**19 139 277**	**15 101 423**	**-21.1%**

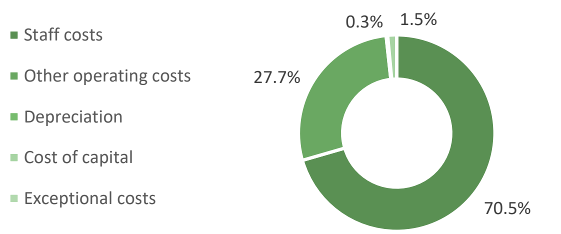
Analysis at main ATSP level

As indicated in the text box above, HCAA actual 2020 terminal costs in TCZ are significantly lower (-21.1%, or -4.0 MEUR2017) than those reported in 2019. This results from the combination of:

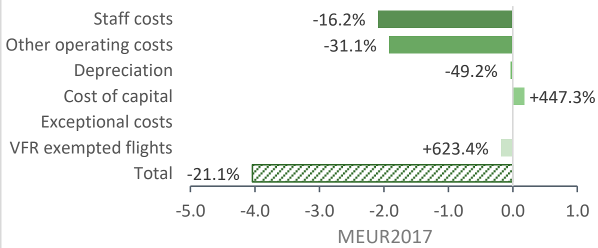
- significantly lower staff costs (-16.2%, or -2.1 MEUR2017);
- significantly lower other operating costs (-31.1%, or -1.9 MEUR2017);
- significantly lower depreciation costs (-49.2%, or 0.04 MEUR2017);
- significantly higher cost of capital (+447.3%, or +0.2 MEUR2017);
- significantly higher deduction for VFR exempted flights (+623.4%).

Cost-containment measures implemented by HCAA reflected mainly the amendment of the ATCO recruitment plan, the reduction of staff costs linked with the evolution of traffic and other non-essential expenses.

HCAA actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	139 316 207	122 295 962	-12.2%
Real terminal costs (EUR2017)	19 456 716	15 457 426	-20.6%
Real gate-to-gate costs (EUR2017)	158 772 923	137 753 388	-13.2%
En-route share in gate-to-gate costs (%)	**87.7%**	**88.8%**	**+1.0 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Greece decreased (-13.2%, or -21.0 MEUR2017) in real terms. This is a combination of a reduction (-12.2%, or -17.0 MEUR2017) in en-route and a significant decrease (-20.6%, or -4.0 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (88.8%) slightly rose (+1.0 p.p.) compared to the figure reported in 2019 (87.7%).

Breakdown of HCAA gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	117 449 635	89 650 668	-23.7%
Other operating costs	21 133 659	16 850 439	-20.3%
Depreciation	3 724 100	1 374 581	-63.1%
Cost of capital	1 163 485	1 869 261	+60.7%
Exceptional costs	0	0	
VFR exempted flights	-522 191	-586 739	+12.4%
Total HCAA gate-to-gate costs	**142 948 688**	**109 158 211**	**-23.6%**

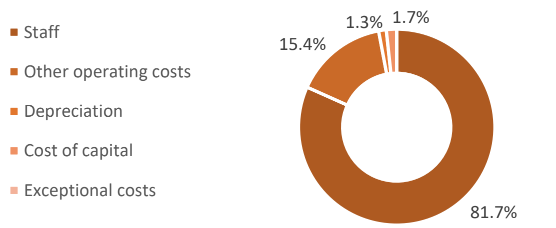
Analysis at main ATSP level

HCAA actual 2020 gate-to-gate costs are significantly lower (-23.6%, or -33.8 MEUR2017) than those reported in 2019. This results from the combination of:

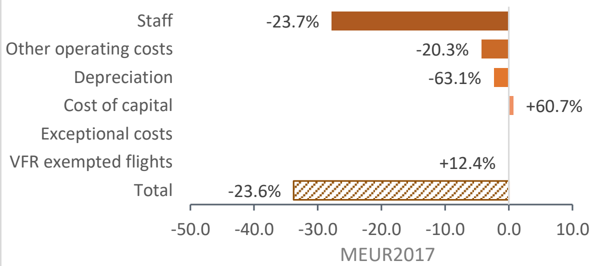
- significantly lower staff costs (-23.7%, or -27.8 MEUR2017);
- significantly lower other operating costs (-20.3%, or -4.3 MEUR2017);
- significantly lower depreciation costs (-63.1%, or -2.3 MEUR2017);
- significantly higher cost of capital (+60.7%, or +0.7 MEUR2017);
- higher deduction for VFR exempted flights (+12.4%).

Details on the drivers behind the changes observed above are provided in the respective analyses of HCAA at en-route and terminal charging zone level.

HCAA actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Greece

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Annual Monitoring Report 2020

Local level view

Hungary

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Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Hungarocontrol	98	C	D	D	D	D

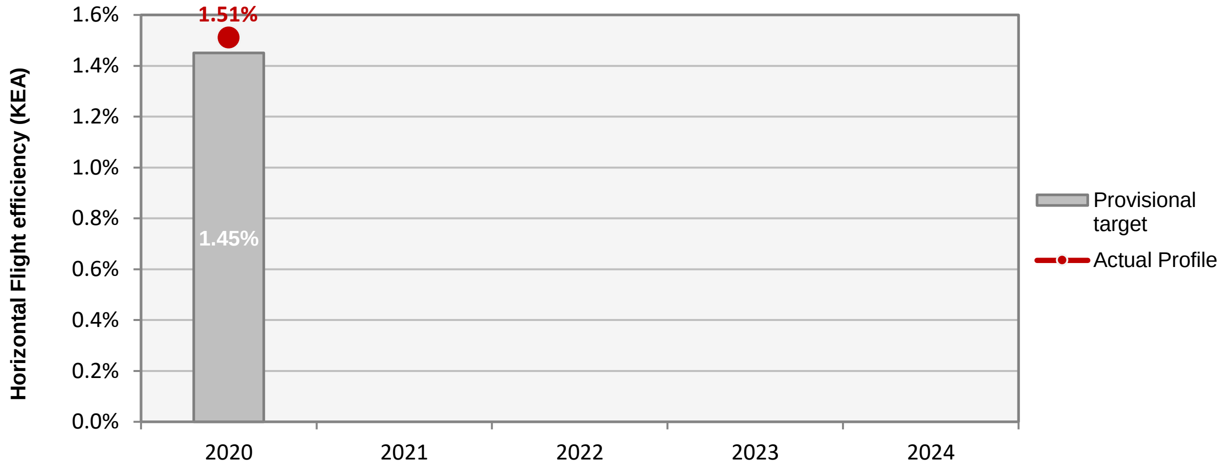
Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

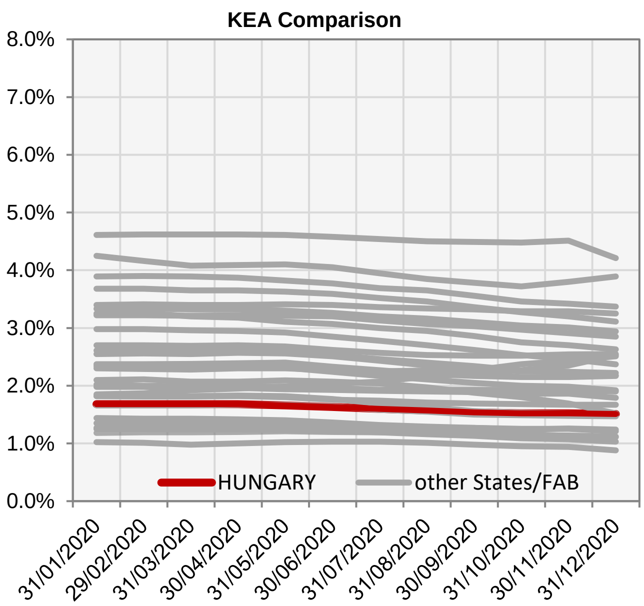
KEA

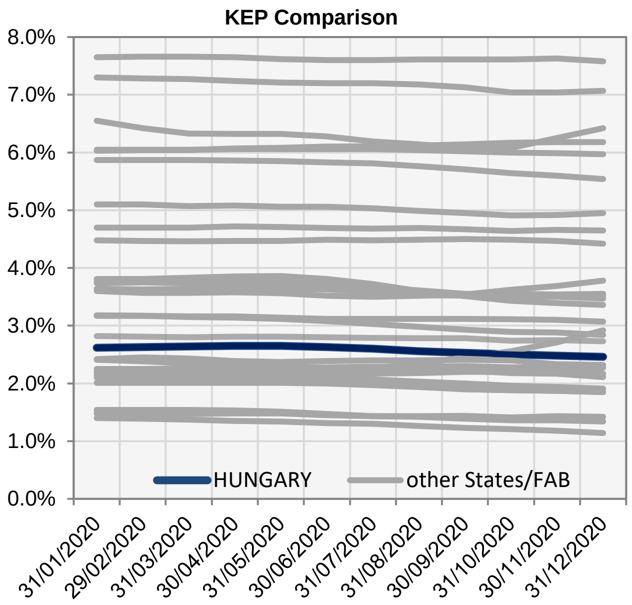
	2020	2021	2022	2023	2024
Provisional target	1.45%				
Actual performance	1.51%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.68%	1.68%	1.68%	1.68%	1.66%	1.63%	1.60%	1.57%	1.54%	1.52%	1.52%	1.51%
KEP	2.62%	2.63%	2.64%	2.65%	2.65%	2.63%	2.60%	2.56%	2.53%	2.50%	2.48%	2.46%
KES	2.24%	2.27%	2.28%	2.30%	2.30%	2.29%	2.27%	2.25%	2.20%	2.16%	2.14%	2.12%



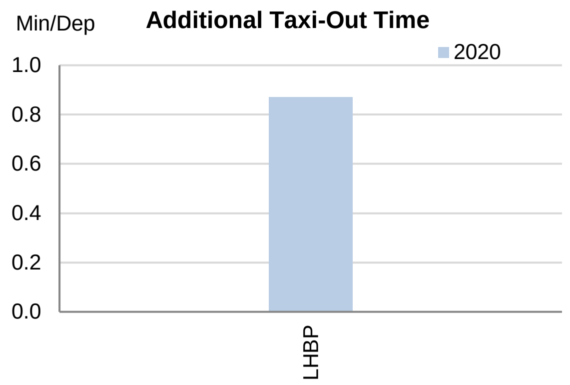


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

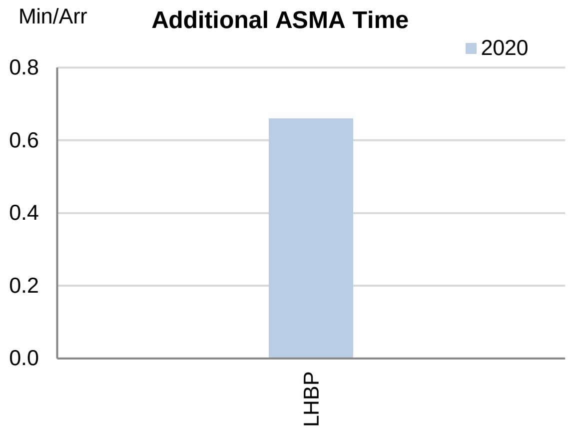
Hungary identified only its main airport Budapest as subject to RP3 monitoring. The Airport Operator Data Flow is correctly established and all environmental indicators can be monitored.
After a traffic increase of 33% along RP2 (2019 vs 2015), traffic at Budapest airport decreased by 61% in 2020 compared to 2019.
Both additional time indicators improved with respect to 2019 in different proportion, with additional taxi-out times 46% lower than the values in 2019 while the additional ASMA times only decreased by 22%.
The share of CDO flights is slightly above the overall RP3 value in 2020.

2. Additional Taxi-Out Time



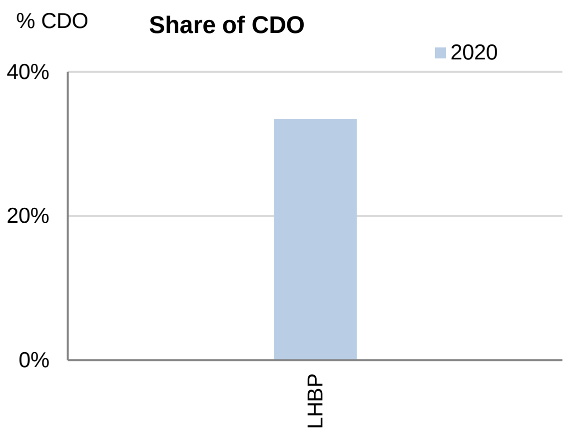
Additional taxi-out times at Budapest significantly lowered (LHBP; 2019: 1.63 min/dep.; 2020: 0.87 min/dep.)
After January and February, when additional taxi-out times were around 1.5 min/dep. the performance drastically improved and the rest of the year these additional times have averaged 0.51 min/dep.

3. Additional ASMA Time



The additional times in the terminal airspace also decreased in 2020 (LHBP; 2019: 0.85 min/arr.; 2020: 0.66 min/arr.) but in a smaller proportion compared to the additional taxi-out times. Nevertheless there was a clear impact of the reduction in traffic, with ASMA times reducing to nearly zero in April and May, and averaging only 0.28 min/arr. the rest of the year.

4. Share of arrivals applying CDO



The share of CDO flights for Budapest (33.4%) is slightly above the overall RP3 value in 2020 (32.5%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Budapest - Ferihegy-LHBP	0.87					0.66					33%				

Update on Military dimension of the plan

The impact of military operations on civil traffic was irrelevant in 2020. The airspace design and procedures are in line with FUA policies.

Military - related measures implemented or planned to improve capacity

Nil

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Hungary	55%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Budapest	55%				

Initiatives implemented or planned to improve PI#6

As the most commonly used military reserved airspaces operate up to FL245, the weather has a significant impact on the utilization.
HungaroControl experts believe that this PI could be improved if the reservation by military side would take place not on D-1, but on the day of planned operation. Experts are investigating the possible impact of such a change in the reservation rules.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Hungary	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Budapest	N/A				

Initiatives implemented or planned to improve PI#7

As with the implementation of free route airspace in Hungary in 2015 all the ATS routes have been eliminated.
Since that the entire CDR route concept is not applicable anymore in Hungary.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Hungary	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Budapest	N/A				

Initiatives implemented or planned to improve PI#8

As with the implementation of free route airspace in Hungary in 2015 all the ATS routes have been eliminated.
Since that the entire CDR route concept is not applicable anymore in Hungary.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.90					
Actual performance	0.00					

NSA's assessment of capacity performance

As due to COVID-19 pandemic the traffic level has dropped dramatically in Hungary to reach 0 minutes delay per flight was obvious. HungaroControl has put the focus was on how to ensure the service continuity while minimizing the spread of virus among the operational personnel.

Monitoring process for capacity performance

In 2020 regular WebEx meetings were organised between the ANSP and the NSA focusing on the issues like how to organise the rostering in order to ensure the service continuity, how to maintain the ATCOs proficiency. As the traffic demand was well below the planned capacity, capacity was not an issue.

Capacity Planning

According to the available information the traffic demand in 2021 still will be below the available capacity, therefore HungaroControl aims for 0 minutes delay per flight this years too.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	97	101					Due to the significant reduction in air traffic, it was not possible to complete the planned training of new ATCOs in 2020. The training of student ATCOs is expected to be completed in 2021.
Actual	97	93					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Hungary experienced a traffic reduction of 57% from 2019 levels, to 381k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

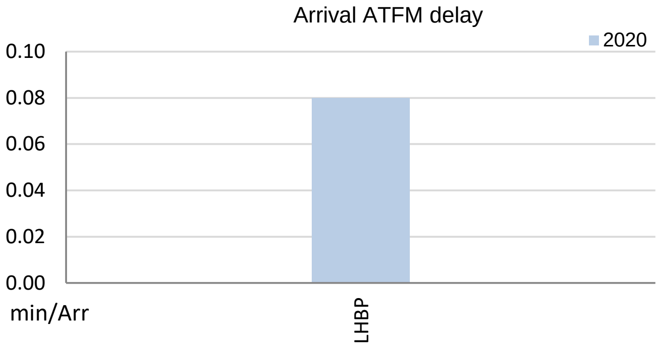
En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.90					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Hungary identified only its main airport Budapest as subject to RP3 monitoring. The Airport Operator Data Flow is correctly established and all capacity indicators can be monitored.
After a traffic increase of 33% along RP2 (2019 vs 2015), traffic at Budapest airport decreased by 61% in 2020 compared to 2019. Regardless this reduction in traffic, the annual average for arrival ATFM delay was higher than in 2019, and Hungary is the only SES state that did not meet the terminal capacity target in 2020.

2. Arrival ATFM Delay

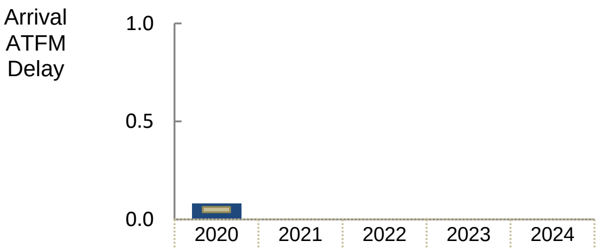


The average arrival ATFM delay at Budapest in 2020 was 0.08 min/arr, more than double of the 0.03 min/arr. observed in 2019 despite the lower traffic.

Although the Hungarian NSA reports that "*Arrival delays in the first two month of 2020 at LHBP generated due to winter weather conditions and not because of the lack of ATC capacity*" according to the reported reasons for the regulations,17% of these delays were in fact due to ATC capacity and 83% were due to weather.

According to the Hungarian monitoring report :
The analysis showed that LVP procedures at LHBP are regularly applied due to weather in the first months of each year. However, the delays accumulated as a result virtually disappear by the end of the year as traffic picks up, but this did not occur in 2020 due to the dramatic reduction in traffic caused by COVID.
In normal traffic situation the delays accumulated due to weather at the beginning of the year virtually disappear by the end of the year as traffic picks up.

3. Arrival ATFM Delay – National Target and Incentive Scheme

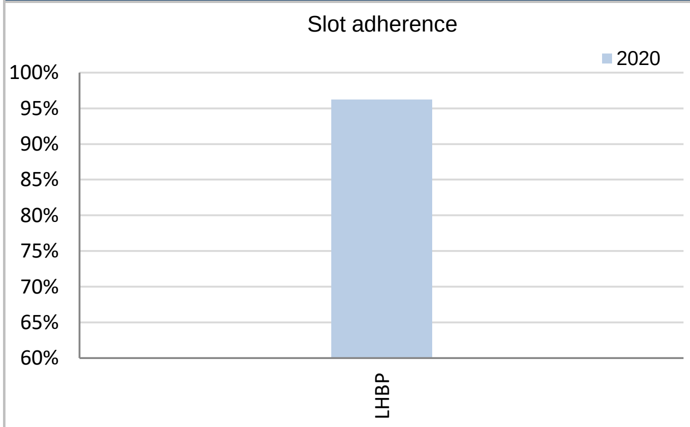


	2020	2021	2022	2023	2024
Actual	0.08				
Target	0.05				

The national target on arrival ATFM delay in 2020 was not met, with actual arrival ATFM delays at 0.08 min/arr. in average, and the national target set at 0.05 min/arr.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Budapest virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Budapest's ATFM slot compliance was 96.2%. With regard to the 3.8% of flights that did not adhere, 2.6% was early and 1.2% was late.

Hungarian NSA reports: *The actual performance in adherence to ATFM slots has improved compared to the previous years. This is mainly due to dramatic reduction of traffic at LHBP. The actual value is well above the limit set by the regulation.*

5. ATC Pre-departure Delay

The performance in terms of ATC pre-departure delay has improved with respect to the previous year (LHBP; 2019: 0.30 min/dep.; 2020: 0.16 min/dep.)
According to the Hungarian monitoring report, this is *mainly due to dramatic reduction of traffic at LHBP* .

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Budapest in 2020 was 12.58 min/dep. The higher delays per flight were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances. In November and December there was also a significant increase of the delay per flight, averaging almost 20 min/dep in December.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

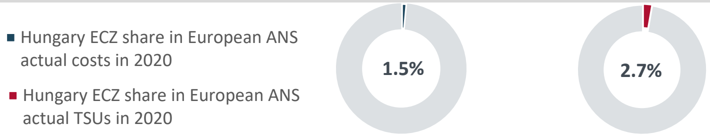
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

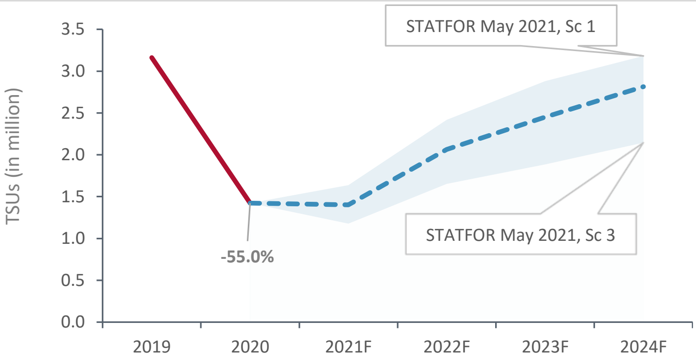
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Budapest - Ferihegy-LHBP	0.08					96.2%					0.16					12.58				

Contextual economic information: en-route air navigation services

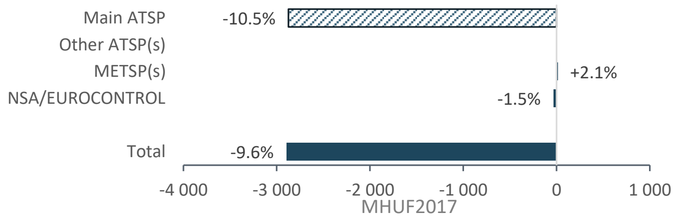
FAB:	FAB CE
Main ATSP:	HungaroControl
National currency:	HUF
Exchange rate:	1 EUR = 308.993 HUF



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal HUF)	31 742 594 408	31 519 742 783	29 197 333 644	-8.0%	-7.4%
Inflation %	3.5%	3.4%	3.4%	-0.1 p.p.	0.0 p.p.
Real en-route costs (HUF2017)	29 476 636 824	30 048 086 090	27 153 408 004	-7.9%	-9.6%
Total en-route Service Units (TSUs)	1 414 000	3 161 594	1 423 059	+0.6%	-55.0%
Real en-route unit cost per Service Unit (HUF2017)	**20 846.28**	**9 504.09**	**19 081.02**	**-8.5%**	**+100.8%**
Real en-route unit cost per Service Unit (EUR2017)	**67.47**	**30.76**	**61.75**	**-8.5%**	**+100.8%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-8.5%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+0.6%) actual TSUs and lower (-7.9%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-55.0%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Hungary ECZ rose substantially (+100.8% in real terms) mainly due to the exceptional -55.0% traffic reduction. In the meantime, en-route costs decreased (-9.6%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: HungaroControl - the main ATSP (-10.5%), the MET service provider (+2.1%) and the NSA/EUROCONTROL (-1.5%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of HungaroControl en-route ANS costs (real HUF2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	13 239 342 352	14 380 378 005	12 880 877 872	-2.7%	-10.4%
Other operating costs	8 677 472 886	8 157 800 786	7 043 945 436	-18.8%	-13.7%
Depreciation	3 615 409 392	3 282 125 691	3 598 166 816	-0.5%	+9.6%
Cost of capital	1 081 069 514	1 456 029 085	878 824 387	-18.7%	-39.6%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total HungaroControl en-route costs	**26 613 294 145**	**27 276 333 567**	**24 401 814 511**	**-8.3%**	**-10.5%**

Analysis at main ATSP level

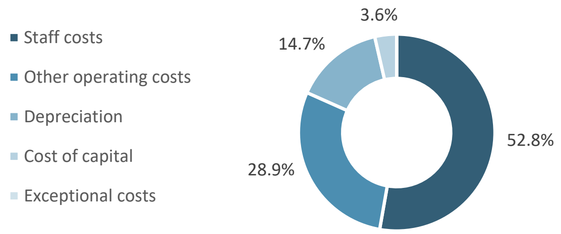
In 2020, HungaroControl actual en-route costs were lower (-8.3%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, HungaroControl actual 2020 en-route costs are significantly lower (-10.5%, or -2 874.5 MHUF2017) compared to those reported in 2019. This results from the combination of:

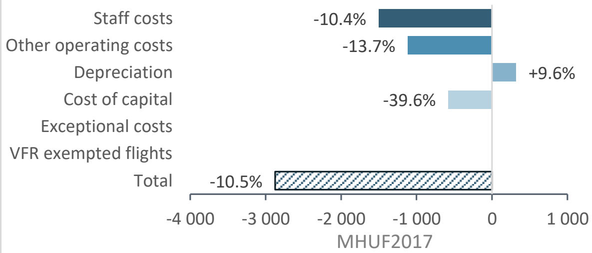
- significantly lower staff costs (-10.4%, or -1 499.5 MHUF2017);
- significantly lower other operating costs (-13.7%, or -1 113.9 MHUF2017);
- higher depreciation costs (+9.6%, or +316.0 MHUF2017);
- significantly lower cost of capital (-39.6%, or -577.2 MHUF2017).

HungaroControl implemented cost-cutting measures that affected recruitment, salaries and performance related benefits, postponement of ATCO training and recruitment, travel costs, internal and external communications, professional exhibitions and other non-essential costs. In addition, cost of capital was lower reflecting lower return on equity.

HungaroControl actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



HUNGARY: Terminal Charging Zone

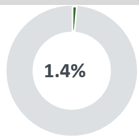
COST-EFFICIENCY

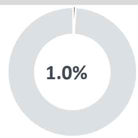
Contextual economic information: terminal air navigation services

Main ATSP:	HungaroControl
National currency:	HUF
Number of airports in TCZ:	1

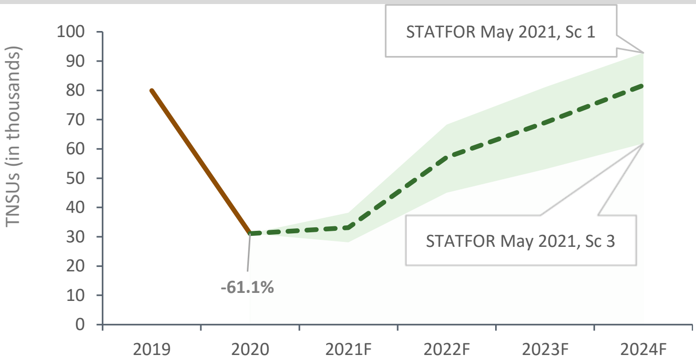
■ Hungary TCZ share in European TANS actual costs in 2020

■ Hungary TCZ share in European TANS actual TNSUs in 2020

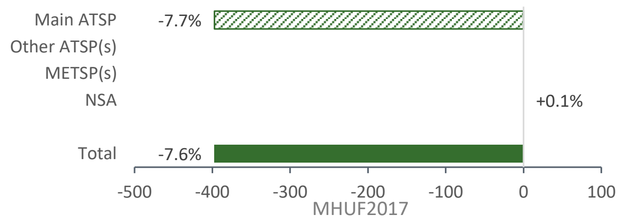




Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal HUF)	5 527 882 541	5 238 902 555	-5.2%
Inflation %	3.4%	3.4%	0.0 p.p.
Real terminal costs (HUF2017)	5 256 760 264	4 859 542 224	-7.6%
Total Terminal Navigation Service Units	79 925	31 092	-61.1%
Real terminal unit cost per Terminal Navigation Service Unit (HUF2017)	**65 771.30**	**156 297.88**	**+137.6%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**212.86**	**505.83**	**+137.6%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Hungary TCZ comprises only Budapest Liszt Ferenc International airport.

Between 2019 and 2020, the terminal unit costs of Hungary TCZ rose substantially (+137.6% in real terms) mainly due to the exceptional -61.1% traffic reduction. In the meantime, terminal costs decreased (-7.6%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-61.1%) is expected to be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: HungaroControl - the main ATSP (-7.7%) and the NSA (+0.1%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of HungaroControl Terminal ANS costs in TCZ (real HUF2017)	2019A	2020A	2020A vs 2019A
Staff	3 146 603 624	2 766 174 789	-12.1%
Other operating costs	1 090 608 849	1 021 310 825	-6.4%
Depreciation	792 897 460	830 063 876	+4.7%
Cost of capital	156 324 939	171 605 867	+9.8%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total HungaroControl terminal costs in TCZ	**5 186 434 872**	**4 789 155 356**	**-7.7%**

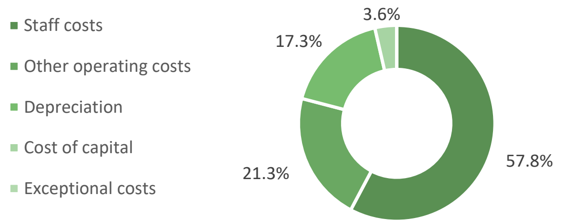
Analysis at main ATSP level

As indicated in the text box above, HungaroControl actual 2020 terminal costs in TCZ are lower (-7.7%, or -397.3 MHUF2017) than those reported in 2019. This results from the combination of:

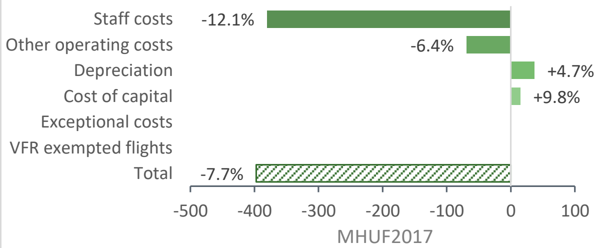
- significantly lower staff costs (-12.1%, or -380.4 MHUF2017);
- lower other operating costs (-6.4%, or -69.3 MHUF2017);
- higher depreciation costs (+4.7%, or +37.2 MHUF2017);
- higher cost of capital (+9.8%, or +15.3 MHUF2017).

HungaroControl implemented cost-cutting measures that affected recruitment, salaries and performance related benefits, postponement of ATCO training and recruitment, travel costs, internal and external communications, professional exhibitions and other non-essential costs.

HungaroControl actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



HUNGARY: Gate-to-gate **COST-EFFICIENCY**

Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (HUF2017)	30 048 086 090	27 153 408 004	-9.6%
Real terminal costs (HUF2017)	5 256 760 264	4 859 542 224	-7.6%
Real gate-to-gate costs (HUF2017)	35 304 846 353	32 012 950 228	-9.3%
En-route share in gate-to-gate costs (%)	**85.1%**	**84.8%**	**-0.3 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Hungary decreased (-9.3%, or -3 291.9 MHUF2017) in real terms. This is a combination of a reduction (-9.6%, or -2 894.7 MHUF2017) in en-route and a decrease (-7.6%, or -397.2 MHUF2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (84.8%) remained fairly constant (-0.3 p.p.) compared to the figure reported in 2019 (85.1%).

Breakdown of HungaroControl gate-to-gate ANS costs (real HUF2017)	2019A	2020A	2020A vs 2019A
Staff	17 526 981 630	15 647 052 661	-10.7%
Other operating costs	9 248 409 635	8 065 256 261	-12.8%
Depreciation	4 075 023 151	4 428 230 691	+8.7%
Cost of capital	1 612 354 024	1 050 430 254	-34.9%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total HungaroControl gate-to-gate costs	**32 462 768 440**	**29 190 969 867**	**-10.1%**

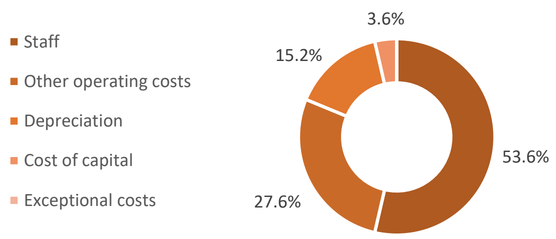
Analysis at main ATSP level

HungaroControl actual 2020 gate-to-gate costs are lower (-10.1%, or -3 271.8 MHUF2017) than those reported in 2019. This results from the combination of:

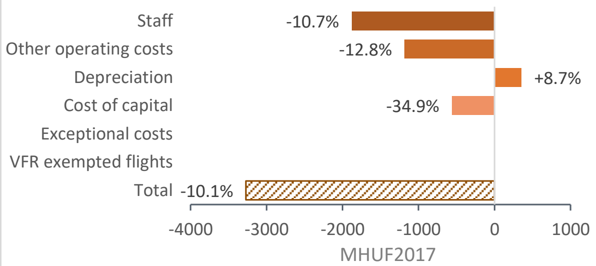
- lower staff costs (-10.7%, or -1 879.9 MHUF2017);
- lower other operating costs (-12.8%, or -1 183.2 MHUF2017);
- higher depreciation costs (+8.7%, or +353.2 MHUF2017);
- significantly lower cost of capital (-34.9%, or -561.9 MHUF2017).

Details on the drivers behind the changes observed above are provided in the respective analyses of HungaroControl at en-route and terminal charging zone level.

HungaroControl actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Hungary

Annual Monitoring Report 2020

Local level view

Ireland

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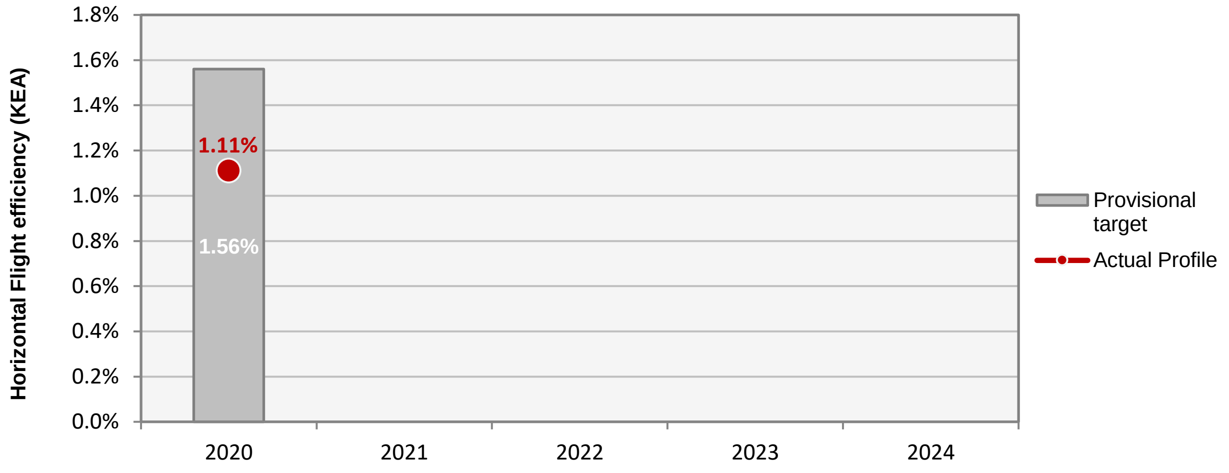
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
IAA	96	D	C	C	D	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

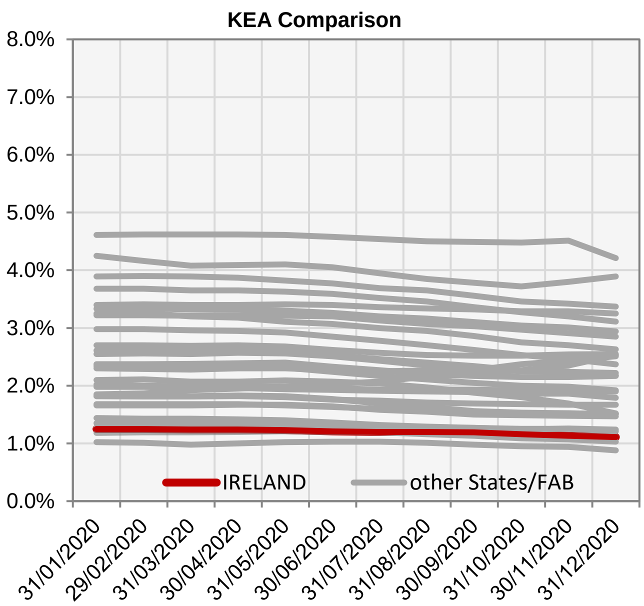
Observations

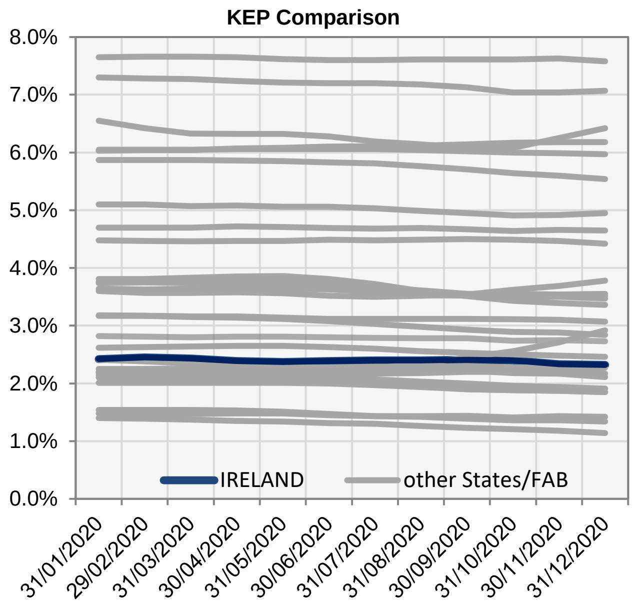
Four out of five EoSM components of the ANSP meet, or exceed, already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

KEA	2020	2021	2022	2023	2024
Provisional target	1.56%				
Actual performance	1.11%				



End of month indicators evolution in 2020	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.25%	1.25%	1.24%	1.24%	1.23%	1.21%	1.20%	1.20%	1.19%	1.16%	1.13%	1.11%
KEP	2.42%	2.45%	2.43%	2.39%	2.37%	2.39%	2.40%	2.40%	2.41%	2.40%	2.33%	2.32%
KES	2.21%	2.22%	2.18%	2.13%	2.09%	2.09%	2.06%	2.04%	2.01%	1.95%	1.89%	1.85%



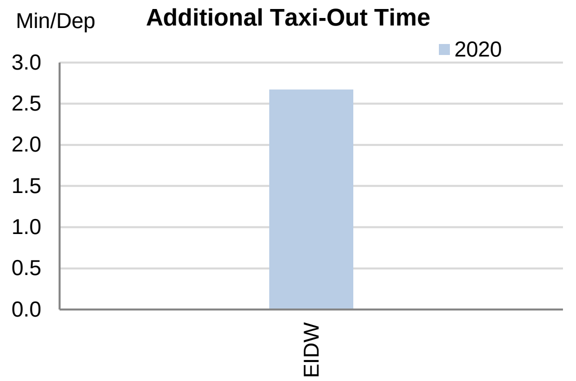


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Ireland includes 3 airports under RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Dublin must be monitored for additional taxi-out and ASMA times.
Traffic at these Irish airports has decreased by 62% in 2020 with respect to 2019.
The environmental performance at Dublin resulted last year in the 4th highest additional taxi-out times in the SES area and the 3rd highest additional ASMA times. The performance notably improved in 2020, with a drastic impact (-62%) of the traffic reduction on both indicators.
The share of CDO flights is in the higher range of all observed values in 2020.
Ireland reports that the NSA holds regular performance meetings with the ANSP at Dublin airport where the data related to all these indicators is reviewed and discussions are held on the factors that impact or enhance performance.

2. Additional Taxi-Out Time

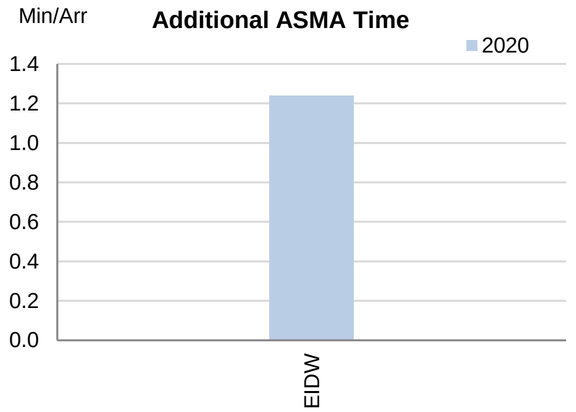


Additional taxi-out times at Dublin drastically lowered (EIDW; 2019: 7.1 min/dep.; 2020: 2.67 min/dep.)
This 2.67 min/dep. annual average was driven by the high additional times in January to March. In fact since April and until the end of the year the additional times averaged 0.76 min/dep.

According to the Irish monitoring report: *Most of the factors influencing additional taxi-out time are related to aerodrome infrastructure rather than ATM capacity. For example, congestion at the runway in use adds significantly to this indicator.*

Dublin Airport has an extensive infrastructural project underway which includes a parallel runway and new taxiways. This improvement in the infrastructure at Dublin airport should translate into an improvement in the additional taxi out time performance from 2022 onwards.

3. Additional ASMA Time

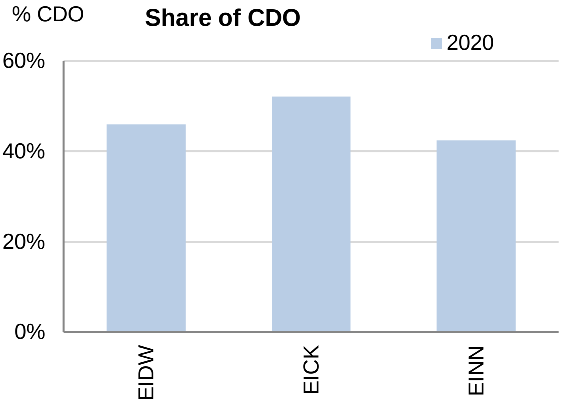


Additional ASMA times at Dublin, like the additional taxi-out times, showed an important impact of the traffic in 2020 (EIDW; 2019: 3.29 min/arr.; 2020: 1.24 min/arr.)
The highest ASMA times were observed in February, influenced by the storms Ciara and Denis.
Between April and August due to the drastic reduction in traffic the additional ASMA times were practically zero, and for the rest of the year they averaged only 0.35 min/arr.

According to the Irish monitoring report: *The additional time is terminal airspace is generally attributable to the flights following the "Point Merge" legs in part or in full.*

However the Point Merge has been demonstrated to have considerable benefits to the Airspace Users in reduced fuel consumption and to the environment in lowering Co2 emissions around terminal areas, and maximising runway throughput compared to vertical holding. These benefits outweigh any impact on ASMA Time.
Dublin Airport has an extensive infrastructural project underway which includes a parallel runway and new taxiways. This improvement in the infrastructure at Dublin airport should translate into an improvement in the Additional time in terminal airspace performance from 2022 onwards.

4. Share of arrivals applying CDO



According to the Irish monitoring report: *The proximity of the UK FIRs to Dublin Airport does have an impact on the data for continuous descent operations due to most aircraft starting descent within the UK airspace.*

The use of "Point Merge" legs in part or in full also may have an impact on the indicator , as this requires aircraft to fly the legs in level flight. However the Point Merge has been demonstrated to have considerable benefits to the Airspace Users in reduced fuel consumption and to the environment in lowering Co2 emissions around terminal areas, and maximising runway throughput compared to vertical holding

Despite the impacting factors mentioned in the Irish monitoring report, the share of CDO flights is relatively high with the values for all airports (well) above the overall RP3 value in 2020 (32.5%). More than half of the arrivals into Cork (EICK) performed a CDO in 2020 (52.1%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Dublin-EIDW	2.67					1.24					46%				
Cork-EICK	-					-					52%				
Shannon-EINN	-					-					42%				

Update on Military dimension of the plan

All military airspace is flight plannable and direct routes are given through activated military airspace as routine.
The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on capacity at Dublin resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity.

Military - related measures implemented or planned to improve capacity

The NSA meets regulatory with the Military through the Standing Civil Military Air Navigation Committee (StaCMAN) to discuss FUA implementation and any associated issues.
Full FAB ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Ireland	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Dublin	N/A				
Shannon	N/A				

Initiatives implemented or planned to improve PI#6

The NSA meets regularly with the Military through the Standing Civil Military Air Navigation Committee (StaCMAN) to discuss FUA implementation and any associated issues.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Ireland	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Dublin	N/A				
Shannon	N/A				

Initiatives implemented or planned to improve PI#7

The NSA meets regularly with the Military through the Standing Civil Military Air Navigation Committee (StaCMAN) to discuss FUA implementation and any associated issues.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Ireland	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Dublin	N/A				
Shannon	N/A				

Initiatives implemented or planned to improve PI#8

The NSA meets regularly with the Military through the Standing Civil Military Air Navigation Committee (StaCMAN) to discuss FUA implementation and any associated issues.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.07					
Actual performance	0.00					

NSA's assessment of capacity performance

The performance in 2020 is reflective of the significant drop in traffic levels.

Monitoring process for capacity performance

No comment provided.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)

Dublin ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	42	42					2.5% reduction FTE in 2020 to reflect 4.5 day working week July-October 2020. Reduction of 1 FTE to account for Job Sharing in response to Cost Containment (0.5 SNN / 0.5 DUB)
Planned monitoring report		64					
Actual	63	61					

Shannon ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	137	142					These figures reflect a lower number of ATCOs in training following the cancellation of classes in 2020 Original RP3 Plan indicated a need for 3 new ATCOs in 2020 (2 SNN; 1 DUB) Figures are on an FTE basis; ATCO Headcount went from 309 in 2019 to 301 in 2020
Planned monitoring report		126					
Actual	124	120					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Ireland experienced a traffic reduction of 60% from 2019 levels, to 225k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

En route Capacity Incentive Scheme

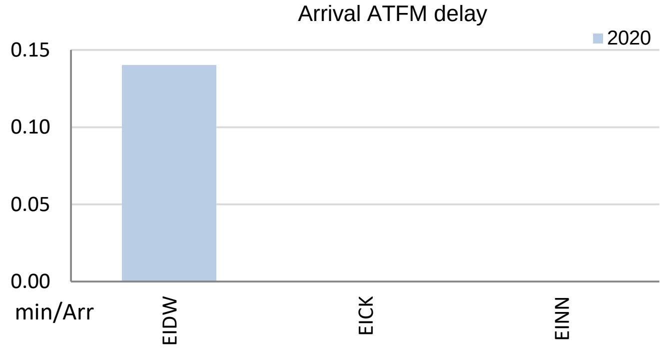
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.07					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

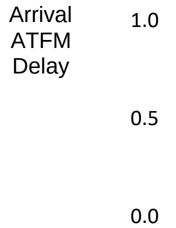
Ireland includes 3 airports under RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Dublin must be monitored for pre-departure delays.
The Airport Operator Data Flow is fully established at Dublin and the monitoring of pre-departure delays can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at these Irish airports has decreased by 62% in 2020 with respect to 2019. Dublin was the only Irish airport that registered arrival ATFM delays in 2020, all in January and February. Slot adherence was above 95% for all three airports.

2. Arrival ATFM Delay



The national average arrival ATFM delay at Irish airports in 2020 was 0.11 min/arr, slightly lower than the 0.14 min/arr in 2019 (-20%).
Only Dublin (EIDW: 2019: 0.17 min/arr.; 2020: 0.14 min/arr.) registered delays in 2020, all in January and February. , 73% of these delays were attributed to weather and 27% to aerodrome capacity.

3. Arrival ATFM Delay – National Target and Incentive Scheme

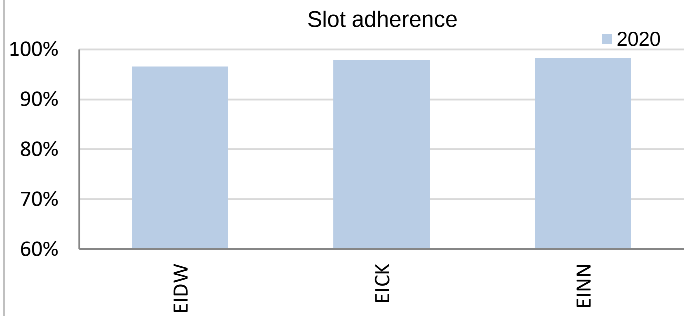


	2020	2021	2022	2023	2024
Actual	0.11				
Target	0.25				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Irish airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
All three airports showed adherence above 95% and the national average was 96.8%.With regard to the 3.2% of flights that did not adhere, 2.2% was early and 1% was late.

The Irish monitoring report points out that Throughout RP2 adherence to ATFM slots at IAA controlled airports has been in the range 95% to 97%. The 2020 adherence performance is better than that in 2019.
The NSA holds regular performance meetings with the ANSP at the airports where the data related to adherence to ATFM measures is reviewed and discussions are held on the factors that impact or enhance performance.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Dublin (the only Irish airport subject to monitoring of this indicator).
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Dublin was above 40% for most months since April 2020, preventing the calculation of this indicator, due to the special traffic composition during the months of the pandemic. Dublin had proper reporting before April 2020.

According to the Irish monitoring report: *The NSA holds regular performance meetings with the ANSP at Dublin Airport where the data related ATC pre-departure delay are reviewed and discussions are held on the factors that impact or enhance performance.*

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Dublin in 2020 was 7.08 min/dep. The higher delays per flight were observed in February.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

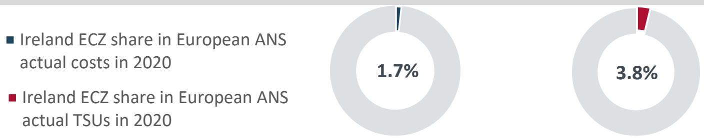
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

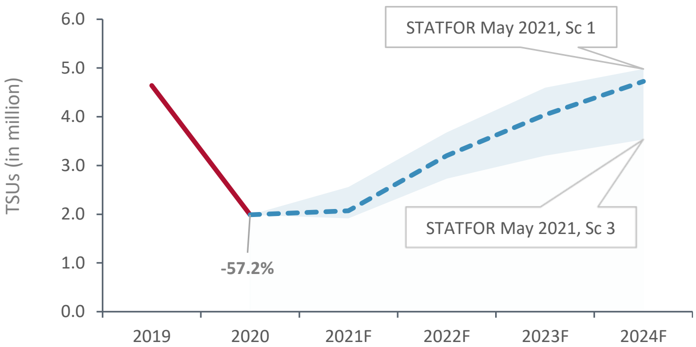
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Dublin-EIDW	0.14					96.6%					n/a					7.08				
Cork-EICK	0					97.9%					-					-				
Shannon-EINN	0					98.3%					-					-				

Contextual economic information: en-route air navigation services

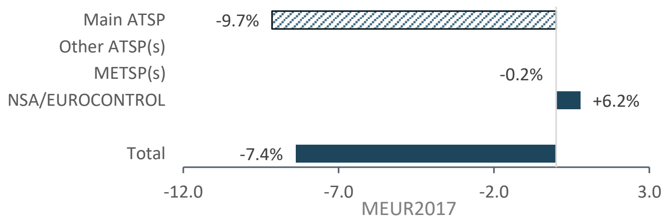
FAB:	UK-Ireland FAB
Main ATSP:	IAA
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	107 525 719	114 371 000	105 895 423	-1.5%	-7.4%
Inflation %	0.0%	0.9%	0.0%	0.0 p.p.	-0.9 p.p.
Real en-route costs (EUR2017)	106 174 010	112 951 852	104 572 845	-1.5%	-7.4%
Total en-route Service Units (TSUs)	1 842 000	4 640 860	1 988 290	+7.9%	-57.2%
Real en-route unit cost per Service Unit (EUR2017)	**57.64**	**24.34**	**52.59**	**-8.8%**	**+116.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-8.8%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+7.9%) actual TSUs and slightly lower (-1.5%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-57.2%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Ireland ECZ rose substantially (+116.1% in real terms) mainly due to the exceptional -57.2% traffic reduction. In the meantime, en-route costs decreased (-7.4%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: IAA - the main ATSP (-9.7%), the MET service provider (-0.2%) and the NSA/EUROCONTROL (+6.2%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of IAA en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	55 786 433	57 819 249	54 540 865	-2.2%	-5.7%
Other operating costs	22 638 045	24 114 646	21 820 611	-3.6%	-9.5%
Depreciation	6 767 269	7 647 000	6 605 868	-2.4%	-13.6%
Cost of capital	2 160 343	4 377 000	1 846 260	-14.5%	-57.8%
Exceptional costs	0	0	0		
VFR exempted flights	-124 992	-124 992	-124 992	-	-
Total IAA en-route costs	**87 227 097**	**93 832 904**	**84 688 612**	**-2.9%**	**-9.7%**

Analysis at main ATSP level

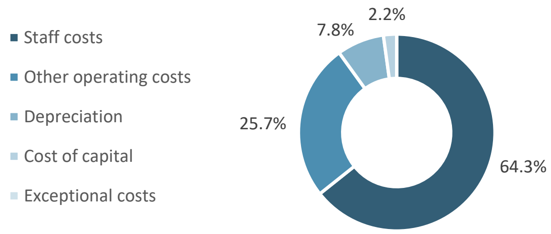
In 2020, IAA actual en-route costs were lower (-2.9%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, IAA actual 2020 en-route costs are lower (-9.7%, or -9.1 MEUR2017) compared to those reported in 2019. This results from the combination of:

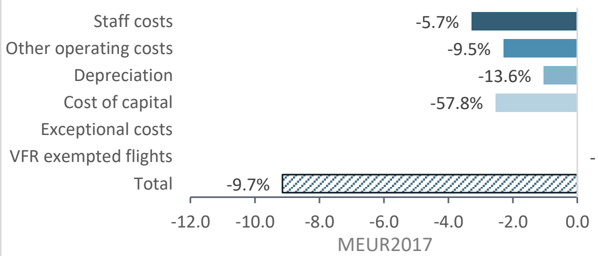
- lower staff costs (-5.7%, or -3.3 MEUR2017);
- lower other operating costs (-9.5%, or -2.3 MEUR2017);
- significantly lower depreciation costs (-13.6%, or -1.0 MEUR2017);
- significantly lower cost of capital (-57.8%, or -2.5 MEUR2017);
- unchanged deduction for VFR exempted flights.

IAA implemented cost-cutting measures resulting in pay cuts and shorter work week. In addition, the government funding subsidised partially the staff costs. Cost-cutting measures affected a range of ANSP technical and administrative expenses. All non-essential training was deferred. Capital related costs were also lower than in 2019 due to the delay in the delivery of capital projects resulting from COVID-related travel restrictions, as well as the decision to deffer all non-essential capital projects.

IAA actual 2020 en-route costs by nature

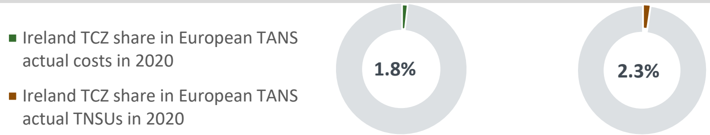


Actual costs variation by nature between 2019 and 2020

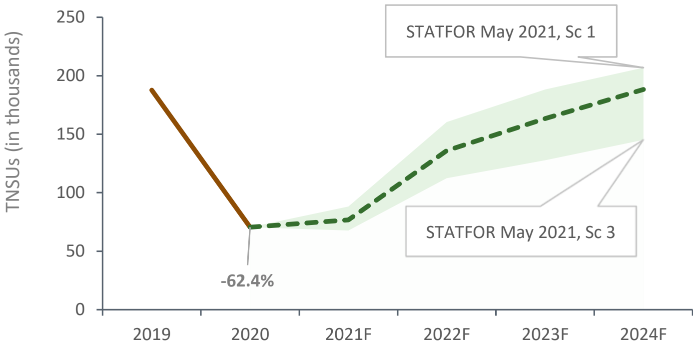


Contextual economic information: terminal air navigation services

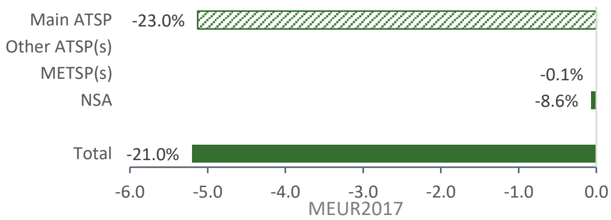
Main ATSP:	IAA
National currency:	EUR
Number of airports in TCZ:	3



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	25 011 000	19 753 806	-21.0%
Inflation %	0.9%	0.0%	-0.9 p.p.
Real terminal costs (EUR2017)	24 704 668	19 505 357	-21.0%
Total Terminal Navigation Service Units	187 709	70 511	-62.4%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**131.61**	**276.63**	**+110.2%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Ireland TCZ comprises 3 airports.

Between 2019 and 2020, the terminal unit costs of Ireland TCZ rose substantially (+110.2% in real terms) mainly due to the exceptional -62.4% traffic reduction. In the meantime, terminal costs significantly reduced (-21.0%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-62.4%) is expected to be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: IAA - the main ATSP (-23.0%), the MET service provider (-0.1%) and the NSA (-8.6%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of IAA Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	9 730 696	9 188 407	-5.6%
Other operating costs	7 705 231	4 753 642	-38.3%
Depreciation	2 960 000	2 477 000	-16.3%
Cost of capital	1 884 000	732 000	-61.1%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total IAA terminal costs in TCZ	**22 279 927**	**17 151 049**	**-23.0%**

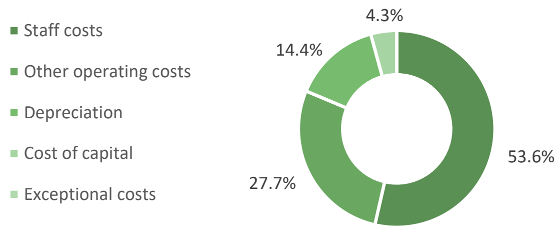
Analysis at main ATSP level

As indicated in the text box above, IAA actual 2020 terminal costs in TCZ are significantly lower (-23.0%, or -5.1 MEUR2017) than those reported in 2019. This results from the combination of:

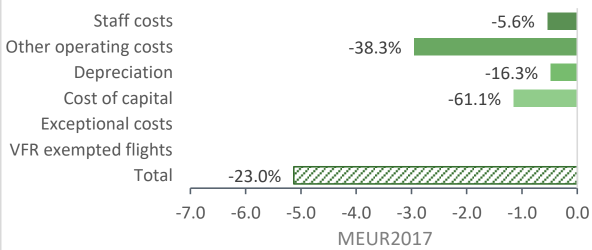
- lower staff costs (-5.6%, or -0.5 MEUR2017);
- significantly lower other operating costs (-38.3%, or -3.0 MEUR2017);
- significantly lower depreciation costs (-16.3%, or -0.5 MEUR2017);
- significantly lower cost of capital (-61.1%, or -1.2 MEUR2017).

IAA implemented cost-cutting measures resulting in pay cuts and shorter work week. In addition, the government funding subsidised partially the staff costs. Cost-cutting measures affected also a range of ANSP technical and administrative expenses. All non-essential training was deferred. Capital related costs were also lower than in 2019 due to the delay in the delivery of capital projects resulting from COVID-related travel restrictions, as well as the decision to deffer all non-essential capital projects.

IAA actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	112 951 852	104 572 845	-7.4%
Real terminal costs (EUR2017)	24 704 668	19 505 357	-21.0%
Real gate-to-gate costs (EUR2017)	137 656 520	124 078 203	-9.9%
En-route share in gate-to-gate costs (%)	**82.1%**	**84.3%**	**+2.2 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Ireland decreased (-9.9%, or -13.6 MEUR2017) in real terms. This is a combination of a reduction (-7.4%, or -8.4 MEUR2017) in en-route and a significant decrease (-21.0%, or -5.2 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (84.3%) increased (+2.2 p.p.) compared to the figure reported in 2019 (82.1%).

Breakdown of IAA gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	67 549 945	63 729 272	-5.7%
Other operating costs	31 819 877	26 574 254	-16.5%
Depreciation	10 607 000	9 082 868	-14.4%
Cost of capital	6 261 000	2 578 260	-58.8%
Exceptional costs	0	0	
VFR exempted flights	-124 992	-124 992	-
Total IAA gate-to-gate costs	**116 112 830**	**101 839 661**	**-12.3%**

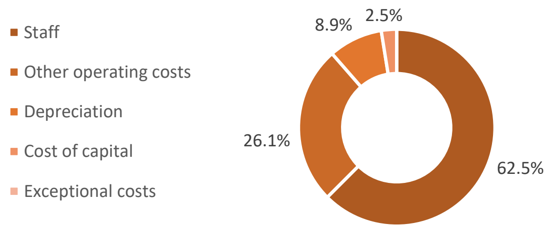
Analysis at main ATSP level

IAA actual 2020 gate-to-gate costs are lower (-12.3%, or -14.3 MEUR2017) than those reported in 2019. This results from the combination of:

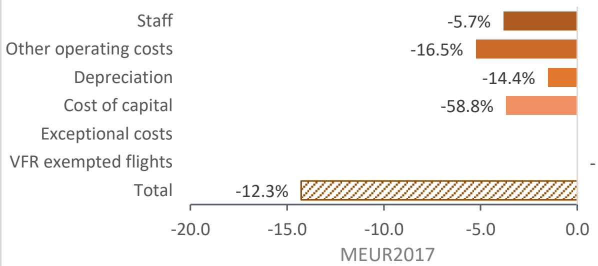
- lower staff costs (-5.7%, or -3.8 MEUR2017);
- significantly lower other operating costs (-16.5%, or -5.2 MEUR2017);
- lower depreciation costs (-14.4%, or -1.5 MEUR2017);
- significantly lower cost of capital (-58.8%, or -3.7 MEUR2017);
- unchanged deduction for VFR exempted flights.

Details on the drivers behind the changes observed above are provided in the respective analyses of IAA at en-route and terminal charging zone level.

IAA actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Ireland

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Annual Monitoring Report 2020
Local level view
Italy

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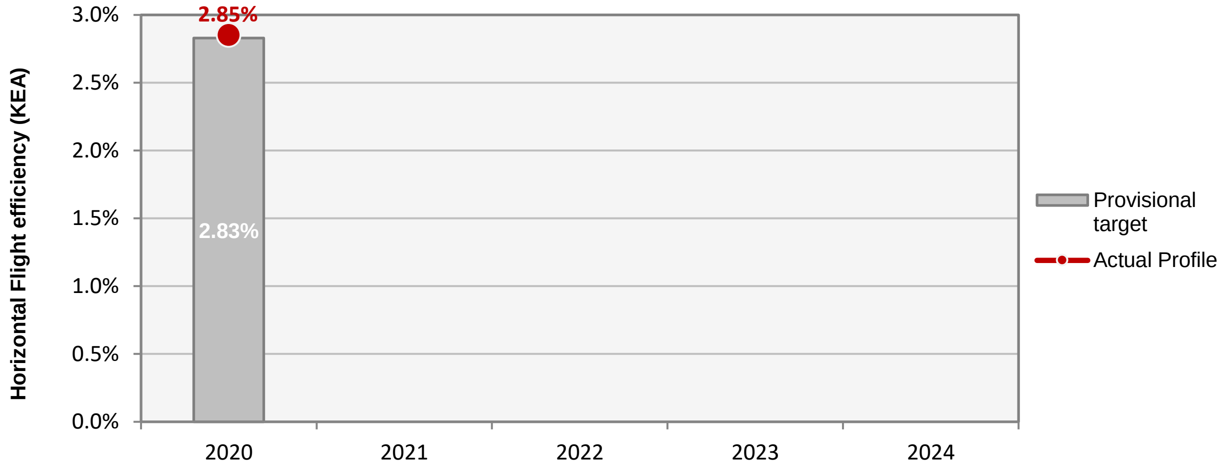
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
ENAV	96	C	C	D	D	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

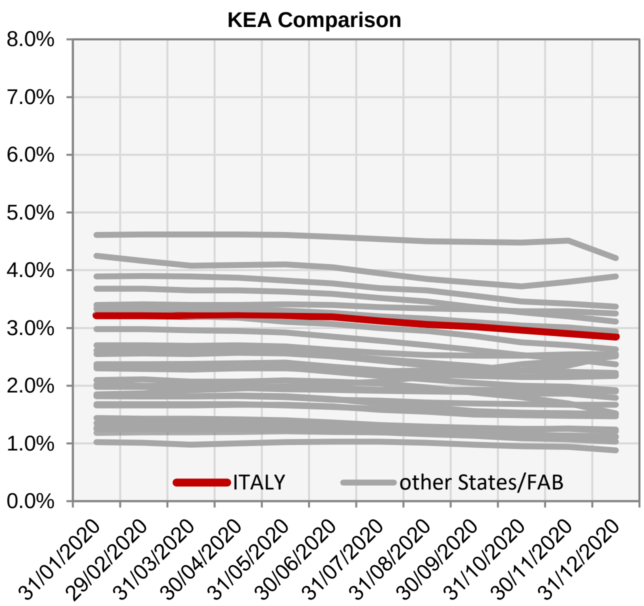
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

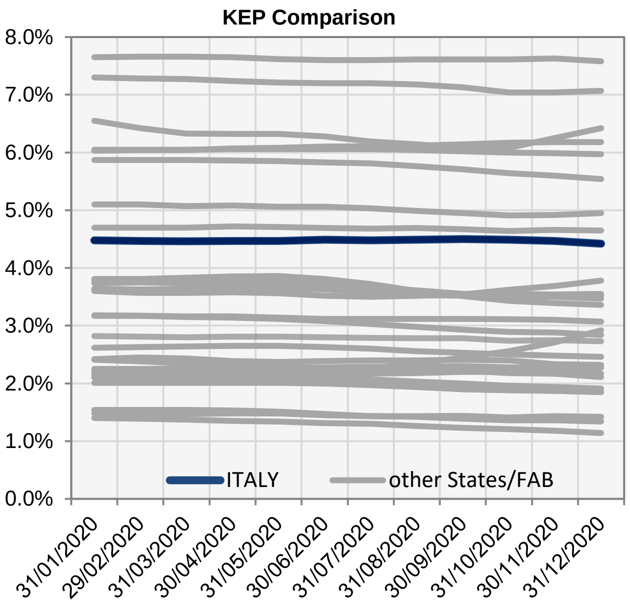
KEA	2020	2021	2022	2023	2024
Provisional target	2.83%				
Actual performance	2.85%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	3.22%	3.22%	3.21%	3.22%	3.21%	3.20%	3.13%	3.07%	3.03%	2.97%	2.91%	2.85%
KEP	4.48%	4.47%	4.46%	4.47%	4.47%	4.49%	4.48%	4.49%	4.50%	4.49%	4.47%	4.42%
KES	4.10%	4.09%	4.08%	4.08%	4.08%	4.09%	4.07%	4.06%	4.05%	4.02%	3.98%	3.93%



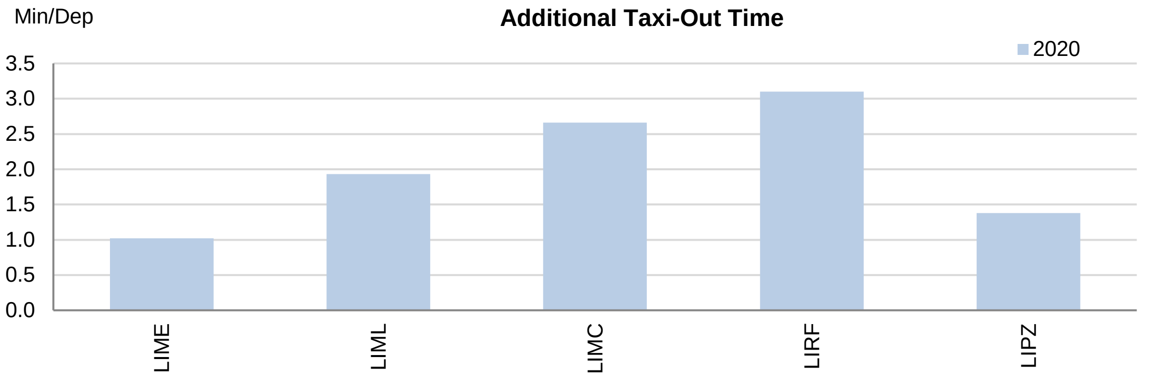


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

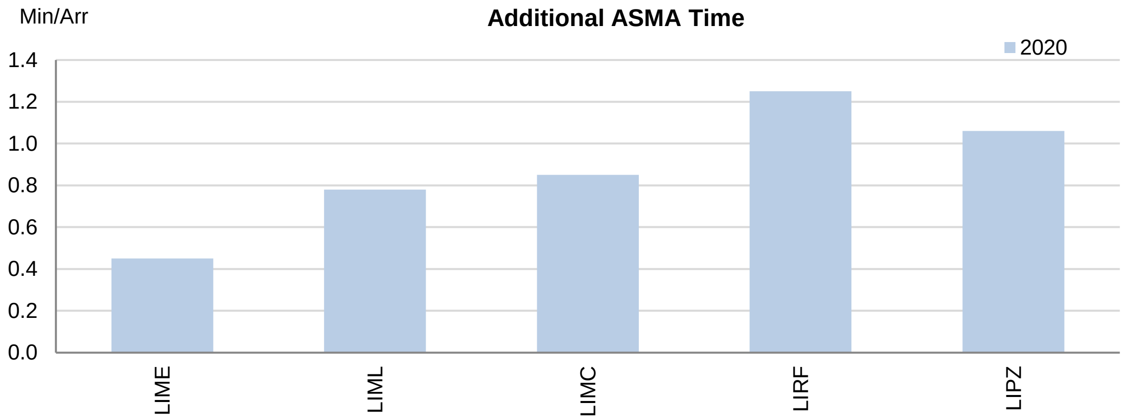
Italy identified five airports as subject to RP3 monitoring. All of them have a fully implemented data flow that allows the proper monitoring of environmental indicators.
Traffic at the ensemble of these Italian airports decreased by 62% in 2020 with respect to 2019, and Milan Linate was closed to commercial traffic from the 16th of March till the 13th of July 2020.
Additional times In 2020 decreased in different degrees depending on the airport, clearly improving with the reduction of traffic as of April.
The overall share of CDO flights is slightly above the overall RP3 value in 2020.

2. Additional Taxi-Out Time



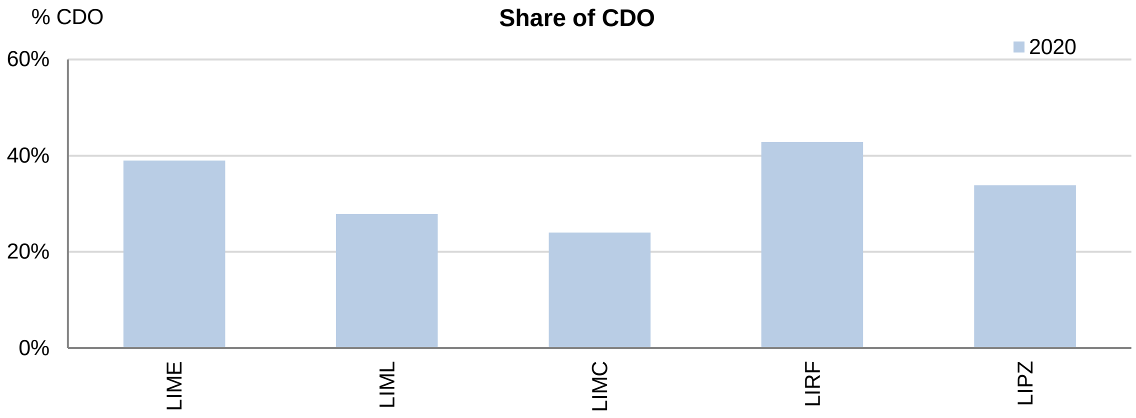
Additional taxi-out times at Rome Fiumicino observed the highest reduction (LIRF; 2019: 7.87 min/dep.; 2020: 3.1 min/dep.), however this is the worst performance observed in 2020 at the RP3 airports subject to monitoring of this indicator. The performance was worse in the first 5 months of the year, with the highest average times observed in April, despite being the lowest month in traffic. From June to December additional taxi-out times at Fiumicino averaged 1.62 min/dep.
Malpensa (LIMC; 2019: 4.76 min/dep.; 2020: 2.66 min/dep.) had notably improved additional taxi-out times as of March, and especially from June to November (when they averaged 1.62 min/dep.) but then in December these increased again back to 4.66 min/dep. (probably influenced by remote de-icing procedures)
At Bergamo (LIME) and Venice (LIPZ) the additional taxi-out times decreased by approximately 45%, while at Milan Linate (LIML) they have reduced by 20%.

3. Additional ASMA Time



The additional ASMA times showed a drastic reduction associated to the decrease in traffic, averaging zero min/arr. at Rome Fiumicino, Milan Malpensa and Bergamo in April and May.
The highest annual reduction in additional times in the terminal airspace at Italian airport was observed at Milan Malpensa (LIMC; 2019: 2.59 min/arr.; 2020: 0.85 min/arr.) where these times were zero in April and May and averaged 0.55 min/arr. from May to December.

4. Share of arrivals applying CDO



Rome-Fiumicino (LIRF), being the major airport in Italy, has the highest share of CDO flights of the 5 airports: 42.9% which is above the overall RP3 value in 2020 (32.5%). Bergamo (LIME) and Venice (LIPZ) also have shares of CDO flights higher than the overall RP3 value (LIME: 39.0%; LIPZ: 33.8%).
Milan-Linate (LIML) and Milan-Malpensa respectively have 27.9% and 24.0% of CDO flights.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Bergamo-LIME	1.02					0.45					39%				
Milan - Linate-LIML	1.93					0.78					28%				
Milan - Malpensa-LIMC	2.66					0.85					24%				
Rome - Fiumicino-LIRF	3.1					1.25					43%				
Venice-LIPZ	1.38					1.06					34%				

Update on Military dimension of the plan

No comment provided.

Military - related measures implemented or planned to improve capacity

No comment provided.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Italy	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Brindisi	N/A				
Milano	N/A				
Padova	N/A				
Rome	N/A				

Initiatives implemented or planned to improve PI#6

Nil

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Italy	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Brindisi	N/A				
Milano	N/A				
Padova	N/A				
Rome	N/A				

Initiatives implemented or planned to improve PI#7

Nil

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Italy	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Brindisi	N/A				
Milano	N/A				
Padova	N/A				
Rome	N/A				

Initiatives implemented or planned to improve PI#8

Nil

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.25					
Actual performance	0.01					

NSA's assessment of capacity performance

[Capacity] target has been largely exceeded as a consequence of lack of traffic.

Monitoring process for capacity performance

No comment provided.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	878.9	928.9					No information on actual ATCO in OPS was provided in monitoring report.
Actual	n/a	n/a					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Italy experienced a traffic reduction of 60% from 2019 levels, to 782k flights. The traffic level was accommodated with just over 5k minutes en route ATFM delays to airspace users, all of which were attributed to ATC industrial action in January 2020.

En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.25					
Deadband +/-						
Actual	0.01					

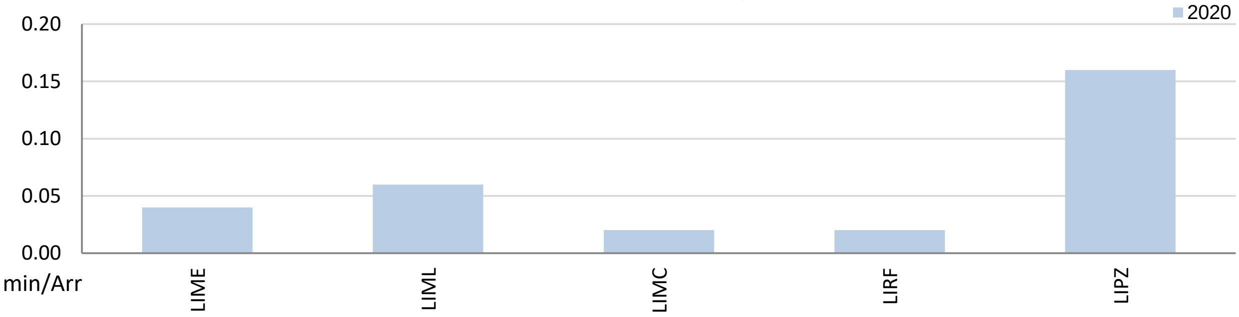
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Italy identified five airports as subject to RP3 monitoring. All of them have a fully implemented data flow that allows the proper monitoring of pre-departure delays. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at both Milan airports, with more than 60% of the reported delay not allocated to any cause.
Traffic at the ensemble of these Italian airports decreased by 62% in 2020 with respect to 2019, and Milan Linate was closed to commercial traffic from the 16th of March till the 13th of July 2020.
Arrival ATFM delays were 85% lower than in 2019 following the drastic drop in traffic. All causes pre-departure delay at Malpensa (LIMC) was the highest in the SES area, with almost 18 min/dep annual average.

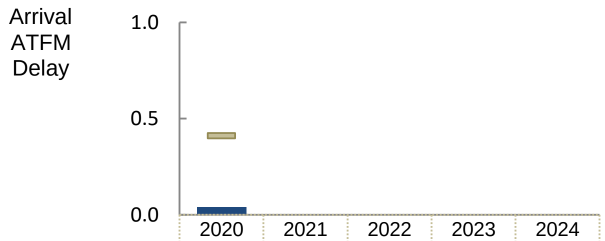
2. Arrival ATFM Delay

Arrival ATFM delay



The national average arrival ATFM delay at Italian airports in 2020 was 0.04 min/arr, significantly lower than the 0.29 min/arr in 2019 (-85%).
Most delays were recorded in the first two months of the year. After that, in line with the drop in traffic, the delays disappeared and only in December some minor delays due to industrial action were recorded at Milan Malpensa.
84% of all delays at Italian airports were attributed to weather.
Some delays associated with industrial action were also recorded in January and Bergamo.
At airport level, the worst delays were observed at Venice (LIPZ), even if only in January and February, resulting in an annual average of 0.16 min/arr.

3. Arrival ATFM Delay – National Target and Incentive Scheme



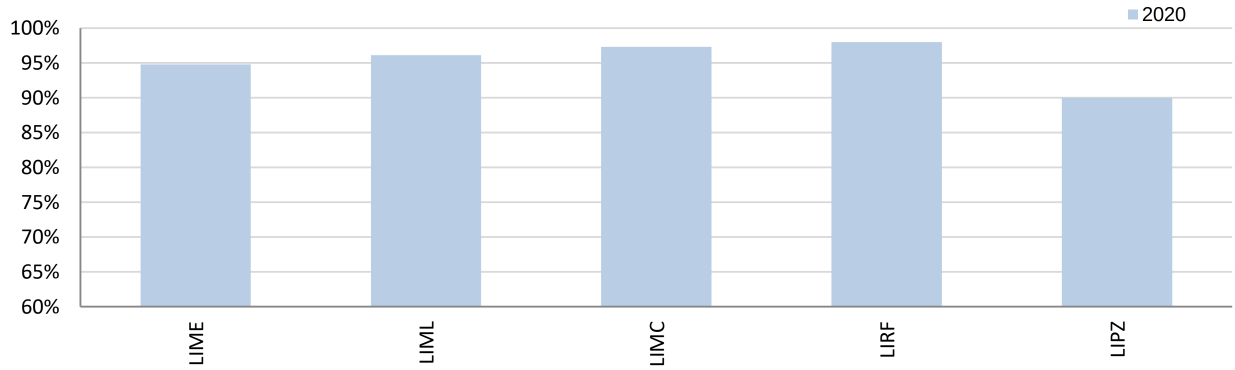
	2020	2021	2022	2023	2024
Actual	0.04				
Target	0.41				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence

Slot adherence



With the drastic drop in traffic, the share of regulated departures from Italian airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
All Italian airports showed adherence at or above 90% and the national average was 95.9%. With regard to the 4.1% of flights that did not adhere, 3.2% was early and 0.9% was late.
It is worth noticing that 8.4% of the regulated departures from Venice (LIPZ) departed early.

5. ATC Pre-departure Delay

The performance at all three Italian airports where this indicator can be calculated has notably improved with respect to the previous year (LIRF; 2019: 1.47 min/dep.; 2020: 0.64 min/dep.; LIME: 2019: 0.99 min/dep.; 2020: 0.53 min/dep.; LIPZ; 2019: 1.75 min/dep.; 2020: 0.86 min/dep.)
The quality of the airport data reported by Milan Linate and Milan Malpensa was too low, preventing the calculation of this indicator for these two airports.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Copenhagen.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)
To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

Both Milan airports had proper reporting before April 2020, but the special traffic composition since then resulted in the share of unidentified delay exceeding the 40%.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Italian airports in 2020 was between 5.14 min/dep for Milan Linate (LIML), which is the second lowest among the RP3 monitored airports, and 17.81 min/dep. for Milan Malpensa (LIMC) which is the highest among the RP3 monitored airports.
The higher delays per flight at Malpensa were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances, but the last trimester there was also an important increase of delays with an average delay in December above 30 min/dep.
Bergamo (LIME: 2020: 8.00 min/dep.) also observed a drastic increase of the all causes pre-departure delay in December, reaching an average of 25 min/dep.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

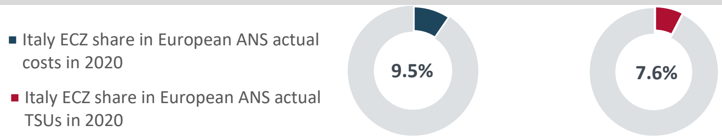
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

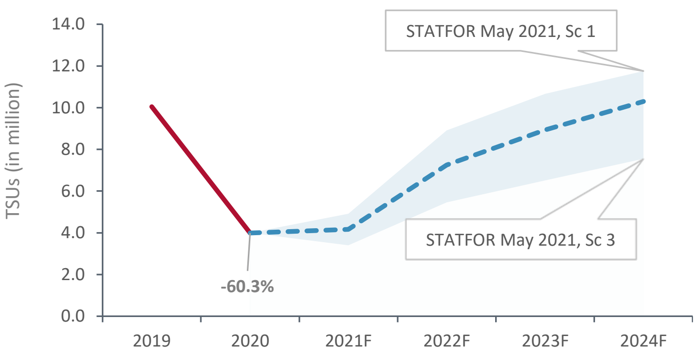
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Bergamo-LIME	0.04					94.8%					0.53					8.00				
Milan - Linate-LIML	0.06					96.1%					n/a					5.14				
Milan - Malpensa-LIMC	0.02					97.3%					n/a					17.81				
Rome - Fiumicino-LIRF	0.02					98.0%					0.64					6.44				
Venice-LIPZ	0.16					90.0%					0.86					9.78				

Contextual economic information: en-route air navigation services

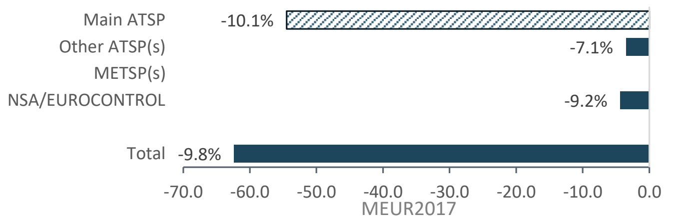
FAB:	BLUE MED FAB
Main ATSP:	ENAV
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	626 761 316	645 281 021	582 128 842	-7.1%	-9.8%
Inflation %	0.1%	0.6%	0.0%	-0.1 p.p.	-0.6 p.p.
Real en-route costs (EUR2017)	618 770 648	637 485 776	575 114 480	-7.1%	-9.8%
Total en-route Service Units (TSUs)	3 921 000	10 045 778	3 989 844	+1.8%	-60.3%
Real en-route unit cost per Service Unit (EUR2017)	**157.81**	**63.46**	**144.14**	**-8.7%**	**+127.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-8.7%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+1.8%) actual TSUs and lower (-7.1%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-60.3%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Italy ECZ rose substantially (+127.1% in real terms) mainly due to the exceptional -60.3% traffic reduction. In the meantime, en-route costs decreased (-9.8%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: ENAV - the main ATSP (-10.1%), the other ATSP operating in the CZ - ITAF (-7.1%) and the NSA/EUROCONTROL (-9.2%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of ENAV en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	294 150 259	311 185 604	282 536 363	-3.9%	-9.2%
Other operating costs	79 317 619	76 076 180	64 736 346	-18.4%	-14.9%
Depreciation	93 478 457	93 732 758	91 259 168	-2.4%	-2.6%
Cost of capital	59 693 000	59 692 591	47 674 663	-20.1%	-20.1%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total ENAV en-route costs	**526 639 334**	**540 687 133**	**486 206 540**	**-7.7%**	**-10.1%**

Analysis at main ATSP level

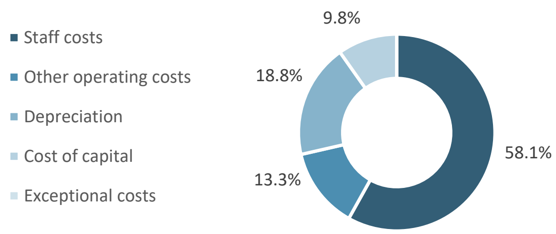
In 2020, ENAV actual en-route costs were lower (-7.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, ENAV actual 2020 en-route costs are significantly lower (-10.1%, or -54.5 MEUR2017) compared to those reported for 2019. This results from the combination of:

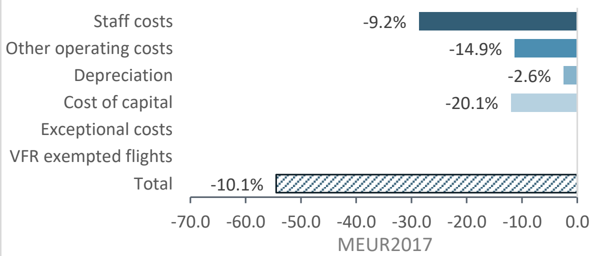
- lower staff costs (-9.2%, or -28.6 MEUR2017);
- significantly lower other operating costs (-14.9%, or -11.3 MEUR2017);
- lower depreciation costs (-2.6%, or -2.5 MEUR2017);
- significantly lower cost of capital (-20.1%, or -12.0 MEUR2017).

ENAV implemented extraordinary measures that affected overtime and unused vacation payments, allowances for missions for both ATCOs and non-operatonal staff, suspension of management incentive scheme, which all led also to the reduction of social contributions. The measures also affected external services, communication, utility, maintenance of non-operational equipment, travel and insurance expenses.

ENAV actual 2020 en-route costs by nature

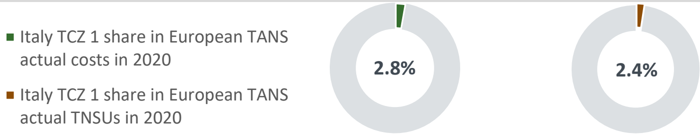


Actual costs variation by nature between 2019 and 2020

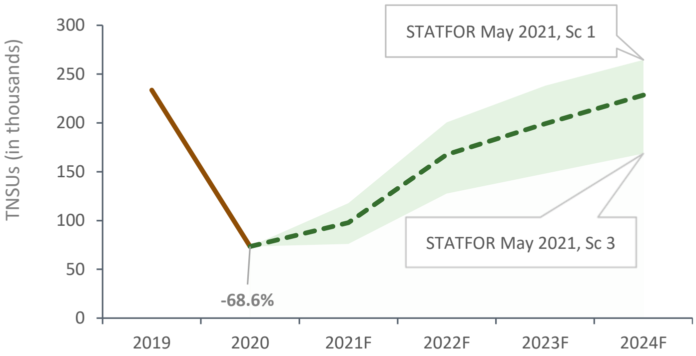


Contextual economic information: terminal air navigation services

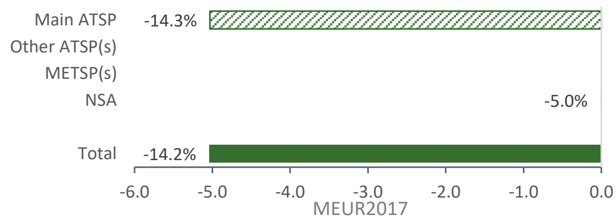
Main ATSP:	ENAV
National currency:	EUR
Number of airports in TCZ:	1



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	35 842 542	30 724 712	-14.3%
Inflation %	0.6%	0.0%	-0.6 p.p.
Real terminal costs (EUR2017)	35 438 210	30 396 073	-14.2%
Total Terminal Navigation Service Units	233 630	73 384	-68.6%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**151.69**	**414.21**	**+173.1%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Italy TCZ 1 comprises only Roma Fiumicino airport.

Between 2019 and 2020, the terminal unit costs of Italy TCZ 1 rose substantially (+173.1% in real terms) mainly due to the exceptional -68.6% traffic reduction. In the meantime, terminal costs significantly reduced (-14.2%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-68.6%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: ENAV - the main ATSP (-14.3%) and the NSA (-5.0%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of ENAV Terminal ANS costs in TCZ 1 (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	16 946 771	14 058 036	-17.0%
Other operating costs	5 426 625	4 126 995	-23.9%
Depreciation	7 027 138	6 236 986	-11.2%
Cost of capital	5 818 494	5 765 728	-0.9%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total ENAV terminal costs in TCZ 1	**35 219 028**	**30 187 745**	**-14.3%**

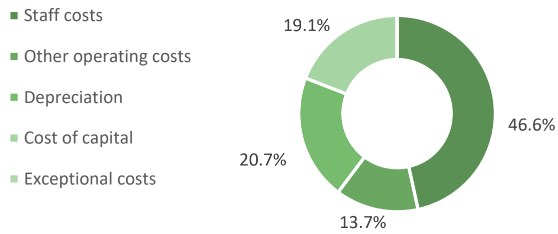
Analysis at main ATSP level

As indicated in the text box above, ENAV actual 2020 terminal costs in TCZ 1 are significantly lower (-14.3%, or -5.0 MEUR2017) than those reported in 2019. This results from the combination of:

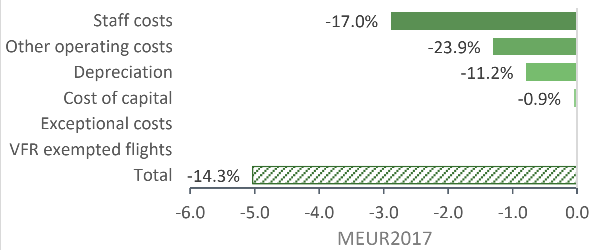
- significantly lower staff costs (-17.0%, or -2.9 MEUR2017);
- significantly lower other operating costs (-23.9%, or -1.3 MEUR2017);
- significantly lower depreciation costs (-11.2%, or -0.8 MEUR2017);
- slightly lower cost of capital (-0.9%, or -0.1 MEUR2017).

ENAV implemented extraordinary measures that affected overtime and unused vacation payments, allowances for missions, suspension of management incentive scheme, which all led to the reduction of social contributions. The measures also affected external services, communication, utility, maintenance of non-operational equipment, travel and insurance expenses.

ENAV actual 2020 terminal costs by nature in TCZ 1

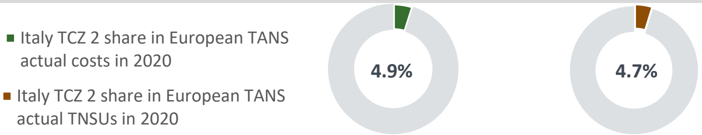


Actual costs variation by nature between 2019 and 2020

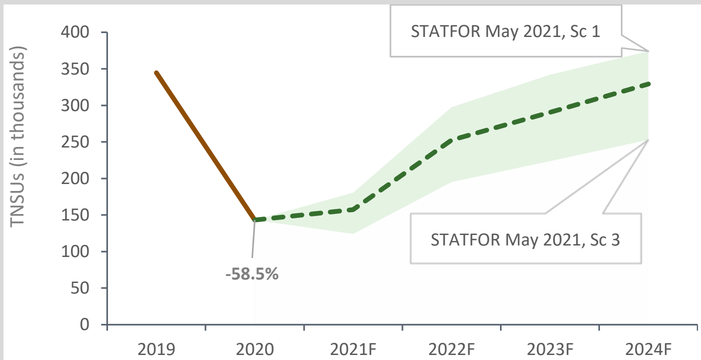


Contextual economic information: terminal air navigation services

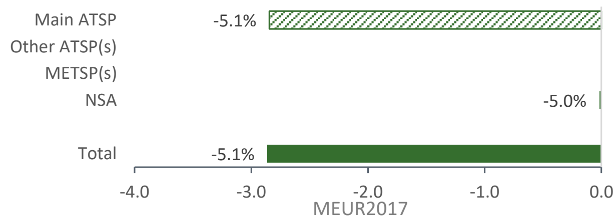
Main ATSP:	ENAV
National currency:	EUR
Number of airports in TCZ:	4



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	56 637 027	53 719 717	-5.2%
Inflation %	0.6%	0.0%	-0.6 p.p.
Real terminal costs (EUR2017)	55 927 870	53 066 438	-5.1%
Total Terminal Navigation Service Units	344 594	143 170	-58.5%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**162.30**	**370.65**	**+128.4%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Italy TCZ 2 comprises 4 airports.

Between 2019 and 2020, the terminal unit costs of Italy TCZ 2 rose substantially (+128.4% in real terms) mainly due to the exceptional -58.5% traffic reduction. In the meantime, terminal costs decreased (-5.1%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-58.5%) would not be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: ENAV - the main ATSP (-5.1%) and the NSA (-5.0%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of ENAV Terminal ANS costs in TCZ 2 (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	29 735 351	27 593 566	-7.2%
Other operating costs	9 505 291	8 555 105	-10.0%
Depreciation	11 239 111	11 584 852	+3.1%
Cost of capital	5 106 928	5 008 622	-1.9%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total ENAV terminal costs in TCZ 2	**55 586 681**	**52 742 145**	**-5.1%**

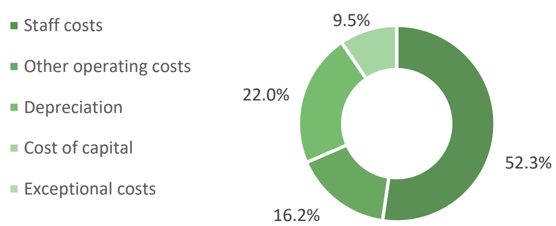
Analysis at main ATSP level

As indicated in the text box above, ENAV actual 2020 terminal costs in TCZ 2 are lower (-5.1%, or -2.8 MEUR2017) than reported in 2019. This results from the combination of:

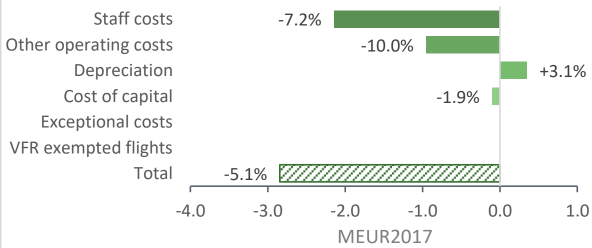
- lower staff costs (-7.2%, or -2.1 MEUR2017);
- lower other operating costs (-10.0%, or -1.0 MEUR2017);
- higher depreciation costs (+3.1%, or +0.3 MEUR2017);
- slightly lower cost of capital (-1.9%, or -0.1 MEUR2017).

ENAV implemented extraordinary measures that affected overtime and unused vacation payments, allowances for missions, suspension of management incentive scheme, which all led to the reduction of social contributions. The measures also affected external services, communication, utility, maintenance of non-operational equipment, travel and insurance expenses.

ENAV actual 2020 terminal costs by nature in TCZ 2



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	637 485 776	575 114 480	-9.8%
Real terminal costs (EUR2017)	91 366 079	83 462 511	-8.7%
Real gate-to-gate costs (EUR2017)	728 851 855	658 576 990	-9.6%
En-route share in gate-to-gate costs (%)	**87.5%**	**87.3%**	**-0.1 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Italy decreased (-9.6%, or -70.3 MEUR2017) in real terms. This is a combination of a reduction (-9.8%, or -62.4 MEUR2017) in en-route and a decrease (-8.7%, or -7.9 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (87.3%) remained fairly constant (-0.1 p.p.) compared to the figure reported in 2019 (87.5%).

Breakdown of ENAV gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	357 867 726	324 187 965	-9.4%
Other operating costs	91 008 096	77 418 446	-14.9%
Depreciation	111 999 007	109 081 006	-2.6%
Cost of capital	70 618 014	58 449 013	-17.2%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total ENAV gate-to-gate costs	**631 492 842**	**569 136 430**	**-9.9%**

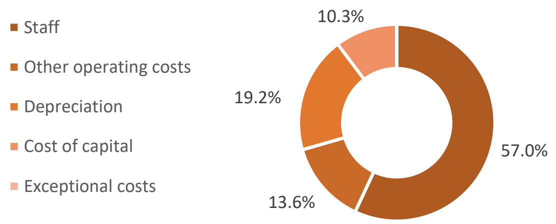
Analysis at main ATSP level

ENAV actual 2020 gate-to-gate costs are lower (-9.9%, or -62.4 MEUR2017) than those reported in 2019. This results from the combination of:

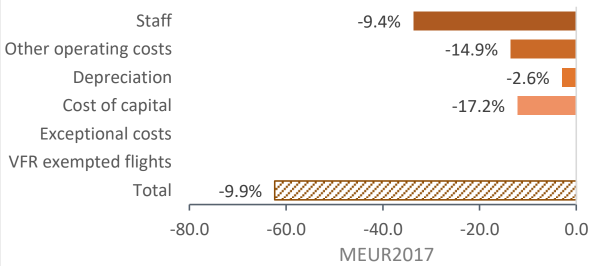
- lower staff costs (-9.4%, or -33.7 MEUR2017);
- lower other operating costs (-14.9%, or -13.6 MEUR2017);
- lower depreciation costs (-2.6%, or -2.9 MEUR2017);
- significantly lower cost of capital (-17.2%, or -12.2 MEUR2017).

Details on the drivers behind the changes observed above are provided in the respective analyses of ENAV at en-route and terminal charging zone level.

ENAV actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Italy

Annual Monitoring Report 2020

Local level view

Latvia

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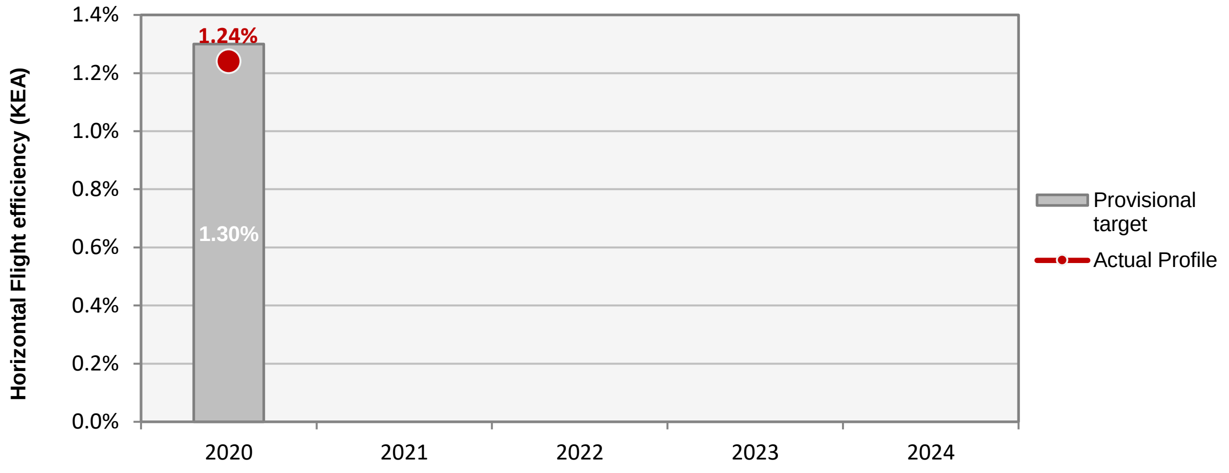
Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
SJSC	91	C	C	C	C	C
Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.						

Observations

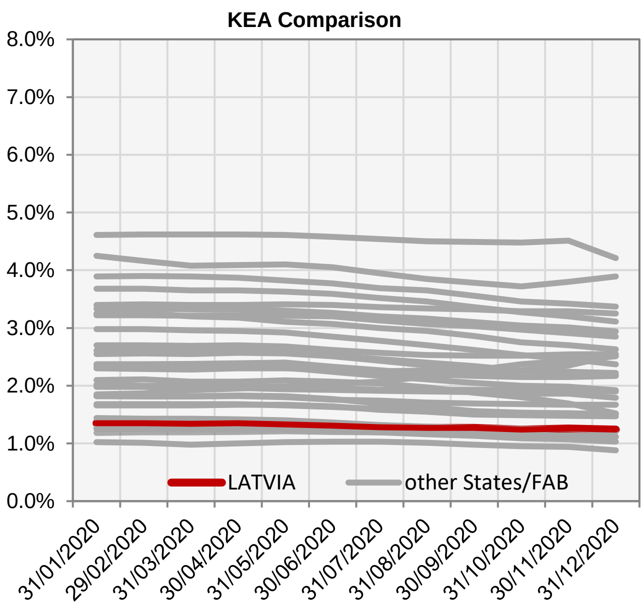
Four out of five EoSM components of the ANSP meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

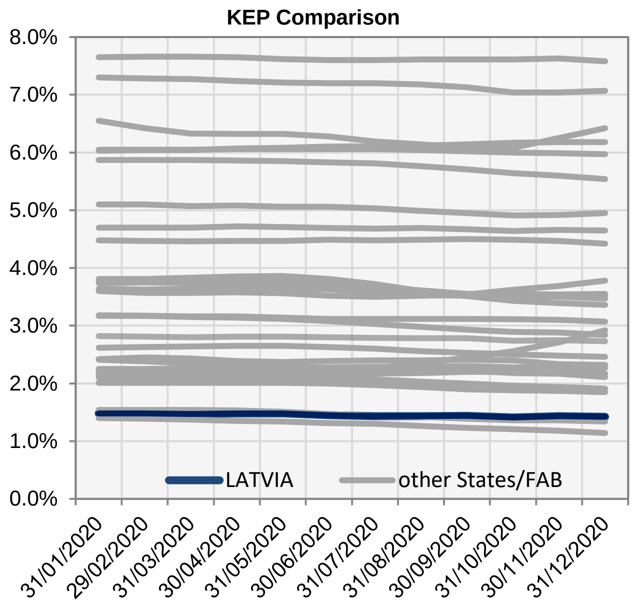
KEA	2020	2021	2022	2023	2024
Provisional target	1.30%				
Actual performance	1.24%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.35%	1.35%	1.34%	1.35%	1.33%	1.31%	1.28%	1.27%	1.27%	1.24%	1.26%	1.24%
KEP	1.48%	1.48%	1.47%	1.48%	1.48%	1.45%	1.43%	1.43%	1.44%	1.41%	1.43%	1.42%
KES	1.21%	1.21%	1.20%	1.20%	1.20%	1.18%	1.16%	1.15%	1.15%	1.14%	1.15%	1.14%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Latvia identified 4 airports as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, additional taxi-out and ASMA times are not monitored and the environmental performance focuses only on the share of arrivals applying CDO.
After a traffic increase of 28% along RP2 (2019 vs 2015), traffic at these Latvian airports decreased by 59% in 2020 compared to 2019.
The shares of CDO flights are in the higher range of all observed values in 2020.

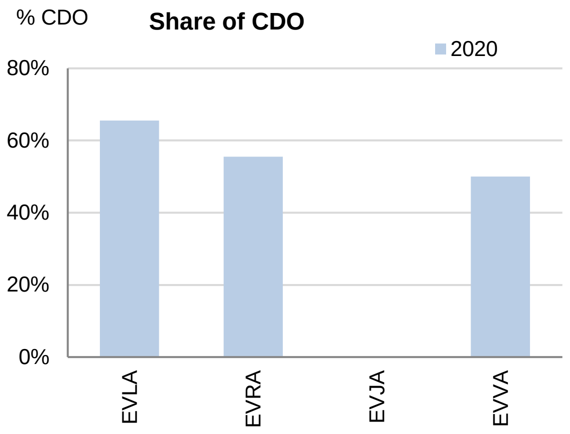
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

4. Share of arrivals applying CDO



According to the Latvian monitoring report: *More regular and increased use of CDO could take place after implementation of PBN procedures at EVRA and EVLA.*
Although PBN procedures still have to be implemented, the shares of CDO flights are already quite high and well above the overall RP3 value (32.5%). All values are at or above 50%.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Liepaja-EVLA	-					-					66%				
Riga-EVRA	-					-					56%				
Tukums Jurmala-EVJA	-					-					n/a				
Ventspils-EVVA	-					-					50%				

Update on Military dimension of the plan

Due to COV19 impact on air traffic in 2020, there was no noticeable impact of military dimension on capacity, or environment.

Military - related measures implemented or planned to improve capacity

It is planned to follow ERNIP guidance and reg 2150/2005 requirements.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Latvia	13%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Riga	13%				

Initiatives implemented or planned to improve PI#6

It is planned that certain areas for mil RPAS, which technically have been integrated as GAT, would not be used. As a result, less airspace reservation would be necessary.
Permanently restricted military areas were not included in the calculations

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Latvia	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Riga	N/A				

Initiatives implemented or planned to improve PI#7

FRA has been implemented since 2015.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Latvia	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Riga	N/A				

Initiatives implemented or planned to improve PI#8

FRA has been implemented since 2015.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.06					
Actual performance	0.00					

NSA's assessment of capacity performance

No capacity issues were present in 2020 due to COV19.

Monitoring process for capacity performance

Oversight and monitoring performed in accordance with EU reg 255/2010.

Capacity Planning

So far the capacity planning has been consistent and appropriate, considering unplanned Cov19 pandemic impact.

ATCO in OPS (FTE)							
Riga ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	56	60					
Planned monitoring report		58					
Actual	55	58					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Latvia experienced a traffic reduction of 56% from 2019 levels, to 129k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

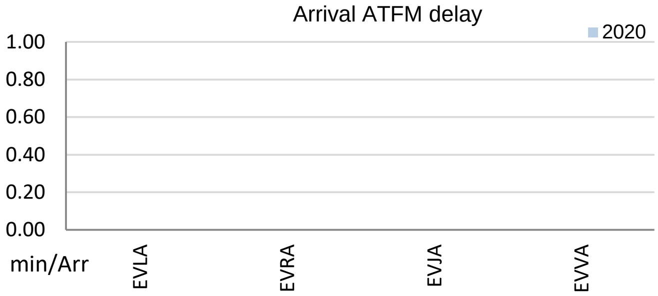
En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.06					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

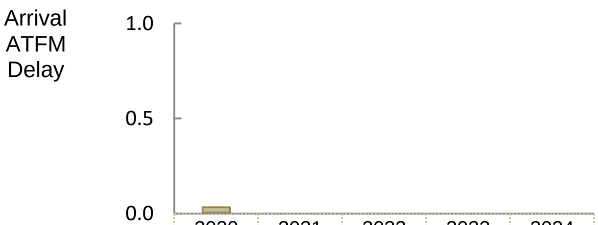
Latvia identified 4 airports as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, pre-departure delays are not monitored and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.
After a traffic increase of 28% along RP2 (2019 vs 2015), traffic at these Latvian airports decreased by 59% in 2020 compared to 2019. Only Riga airport has ATC services. EVVA, EVJA are general aviation aerodromes, while EVLA has only AFIS with limited ops hours.
Zero arrival ATFM delays were registered in 2020 and slot adherence was 98.4%.

2. Arrival ATFM Delay



No arrival ATFM delay was observed at the Latvian airports in 2020, in line with the performance during RP2.

3. Arrival ATFM Delay – National Target and Incentive Scheme

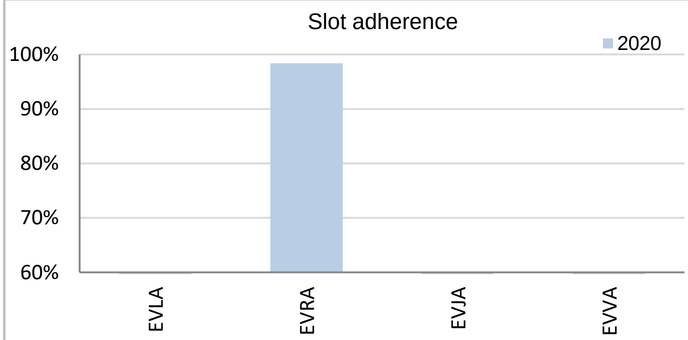


	2020	2021	2022	2023	2024
Actual	0.00				
Target	0.02				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



Only Riga had regulated departures in 2020. With the drastic drop in traffic, these regulated departures from Riga also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Riga's ATFM slot compliance was 98.4%. With regard to the 1.6% of flights that did not adhere, 1.4% was early and 0.2% was late.

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

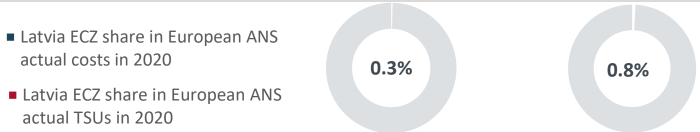
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

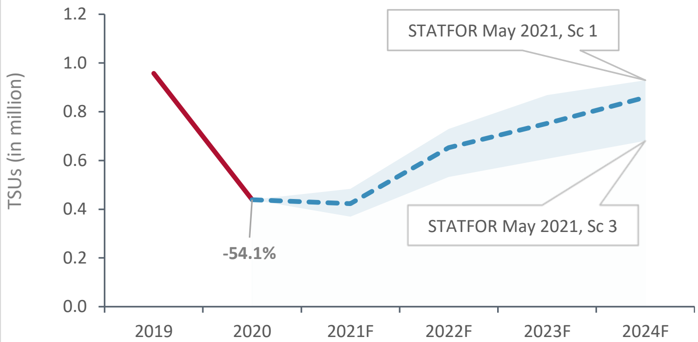
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Liepaja-EVLA	0					n/a					-					-				
Riga-EVRA	0					98.4%					-					-				
Tukums Jurmala-EVJA	0					n/a					-					-				
Ventspils-EVVA	0					n/a					-					-				

Contextual economic information: en-route air navigation services

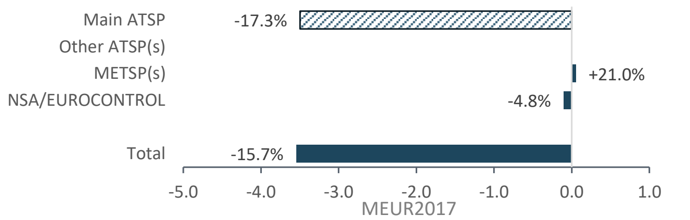
FAB:	NEFAB
Main ATSP:	LGS
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	20 616 315	23 496 457	19 805 150	-3.9%	-15.7%
Inflation %	0.6%	2.7%	0.1%	-0.5 p.p.	-2.6 p.p.
Real en-route costs (EUR2017)	19 770 562	22 604 058	19 060 587	-3.6%	-15.7%
Total en-route Service Units (TSUs)	414 000	957 532	439 248	+6.1%	-54.1%
Real en-route unit cost per Service Unit (EUR2017)	**47.75**	**23.61**	**43.39**	**-9.1%**	**+83.8%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-9.1%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+6.1%) actual TSUs and lower (-3.6%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-54.1%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Latvia ECZ rose substantially (+83.8% in real terms) mainly due to the exceptional -54.1% traffic reduction. In the meantime, en-route costs significantly reduced (-15.7%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: LGS - the main ATSP (-17.3%), the MET service provider (+21.0%) and the NSA/EUROCONTROL (-4.8%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of LGS en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	10 983 235	12 962 868	10 584 660	-3.6%	-18.3%
Other operating costs	2 808 432	3 454 487	2 768 019	-1.4%	-19.9%
Depreciation	2 496 000	2 568 000	1 997 000	-20.0%	-22.2%
Cost of capital	901 740	1 219 287	1 356 000	+50.4%	+11.2%
Exceptional costs	0	0	0		
VFR exempted flights	-15 099	-1 898	0	-100.0%	-100.0%
Total LGS en-route costs	**17 174 308**	**20 202 744**	**16 705 679**	**-2.7%**	**-17.3%**

Analysis at main ATSP level

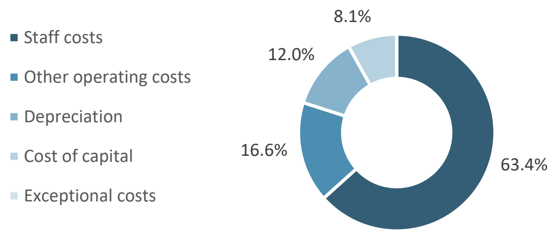
In 2020, LGS actual en-route costs were lower (-2.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, LGS actual 2020 en-route costs are significantly lower (-17.3%, or -3.5 MEUR2017) compared to those reported in 2019. This results from the combination of:

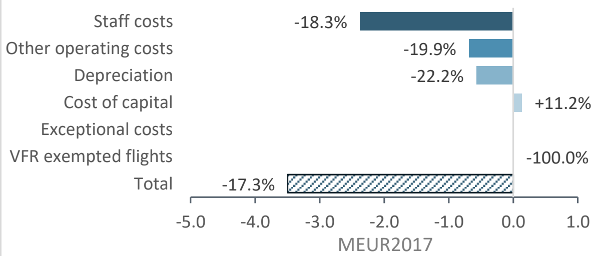
- significantly lower staff costs (-18.3%, or -2.4 MEUR2017);
- significantly lower other operating costs (-19.9%, or -0.7 MEUR2017);
- significantly lower depreciation costs (-22.2%, or -0.6 MEUR2017);
- significantly higher cost of capital (+11.2%, or +0.1 MEUR2017);
- no deduction for VFR exempted flights in 2020.

Cost-saving measures implemented by LGS included reduction of headcounts, reduction of working hours and postponement of all non-essential procurements. In addition, Latvia indicates that all new non-essential projects are delayed.

LGS actual 2020 en-route costs by nature

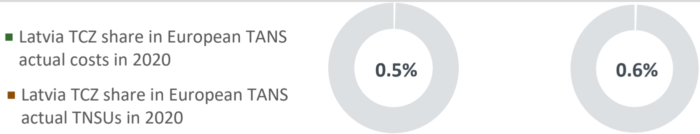


Actual costs variation by nature between 2019 and 2020

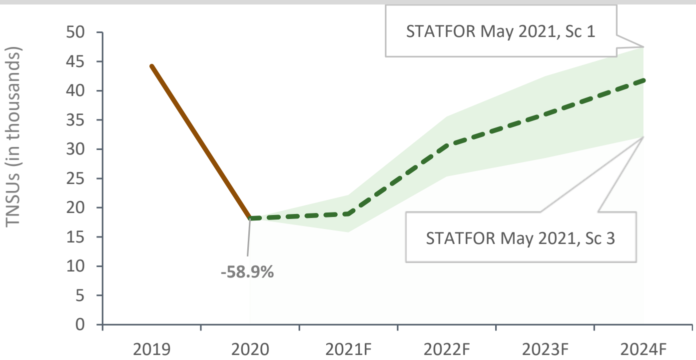


Contextual economic information: terminal air navigation services

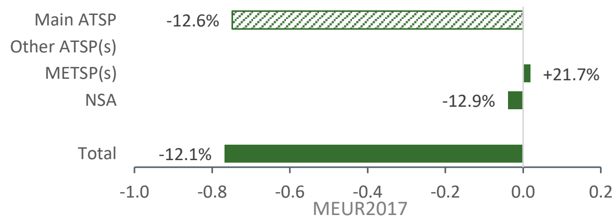
Main ATSP:	LGS
National currency:	EUR
Number of airports in TCZ:	4



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	6 574 232	5 760 273	-12.4%
Inflation %	2.7%	0.1%	-2.6 p.p.
Real terminal costs (EUR2017)	6 340 200	5 572 082	-12.1%
Total Terminal Navigation Service Units	44 200	18 167	-58.9%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**143.44**	**306.72**	**+113.8%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Latvia TCZ comprises 4 airports.

Between 2019 and 2020, the terminal unit costs of Latvia TCZ rose substantially (+113.8% in real terms) mainly due to the exceptional -58.9% traffic reduction. In the meantime, terminal costs significantly reduced (-12.1%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-58.9%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: LGS - the main ATSP (-12.6%), the MET service provider (+21.7%) and the NSA (-12.9%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of LGS Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	3 566 473	2 673 191	-25.0%
Other operating costs	724 114	677 069	-6.5%
Depreciation	1 515 000	1 486 000	-1.9%
Cost of capital	144 232	365 273	+153.3%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total LGS terminal costs in TCZ	**5 949 819**	**5 201 533**	**-12.6%**

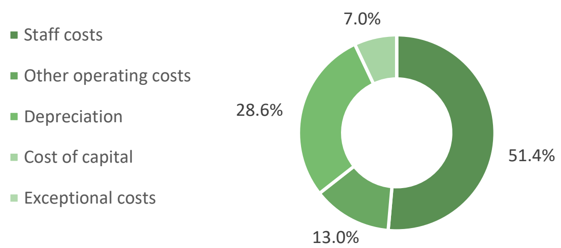
Analysis at main ATSP level

As indicated in the text box above, LGS actual 2020 terminal costs in TCZ are significantly lower (-12.6%, or -0.7 MEUR2017) than those reported in 2019. This results from the combination of:

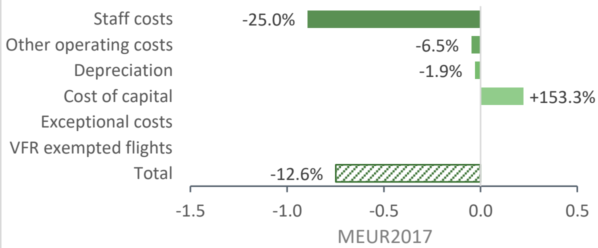
- significantly lower staff costs (-25.0%, or -0.9 MEUR2017);
- lower other operating costs (-6.5%, or -0.05 MEUR2017);
- slightly lower depreciation costs (-1.9%, or -0.03 MEUR2017);
- significantly higher cost of capital (+153.3%, or +0.2 MEUR2017).

Cost-savings measures implemented by LGS included reduction of headcounts, reduction of working hours and postponement of all non-essential procurements. In addition, Latvia indicates that all new non-essential projects are delayed.

LGS actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	22 604 058	19 060 587	-15.7%
Real terminal costs (EUR2017)	6 340 200	5 572 082	-12.1%
Real gate-to-gate costs (EUR2017)	28 944 259	24 632 670	-14.9%
En-route share in gate-to-gate costs (%)	**78.1%**	**77.4%**	**-0.7 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Latvia decreased (-14.9%, or -4.3 MEUR2017) in real terms. This is a combination of a significant reduction (-15.7%, or -3.5 MEUR2017) in en-route and a decrease (-12.1%, or -0.8 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (77.4%) slightly reduced (-0.7 p.p.) compared to the figure reported in 2019 (78.1%).

Breakdown of LGS gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	16 529 341	13 257 851	-19.8%
Other operating costs	4 178 601	3 445 088	-17.6%
Depreciation	4 083 000	3 483 000	-14.7%
Cost of capital	1 363 518	1 721 273	+26.2%
Exceptional costs	0	0	
VFR exempted flights	-1 898	0	-100.0%
Total LGS gate-to-gate costs	**26 152 562**	**21 907 212**	**-16.2%**

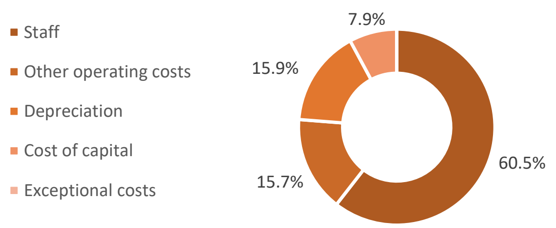
Analysis at main ATSP level

LGS actual 2020 gate-to-gate costs are significantly lower (-16.2%, or -4.2 MEUR2017) than those reported in 2019. This results from the combination of:

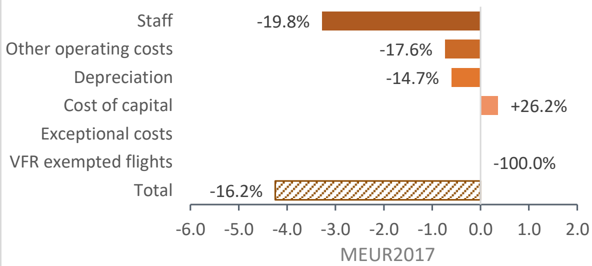
- significantly lower staff costs (-19.8%, or -3.3 MEUR2017);
- significantly lower other operating costs (-17.6%, or -0.7 MEUR2017);
- lower depreciation costs (-14.7%, or -0.6 MEUR2017);
- significantly higher cost of capital (+26.2%, or +0.4 MEUR2017);
- no deduction for VFR exempted flights in 2020.

Details on the drivers behind the changes observed above are provided in the respective analyses of LGS at en-route and terminal charging zone level.

LGS actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Latvia

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Annual Monitoring Report 2020

Local level view

Lithuania

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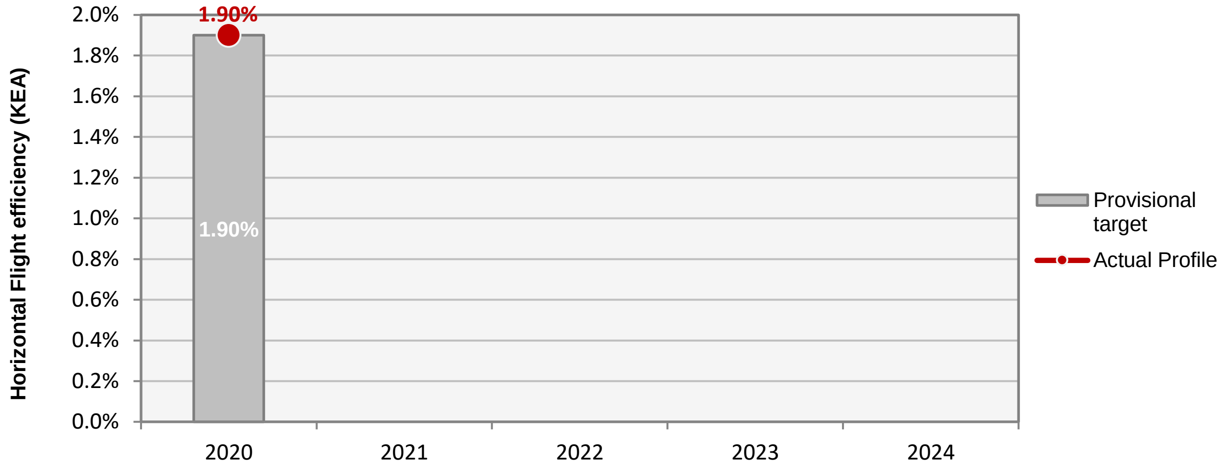
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Oro Navigacjia	98	C	D	D	C	D

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

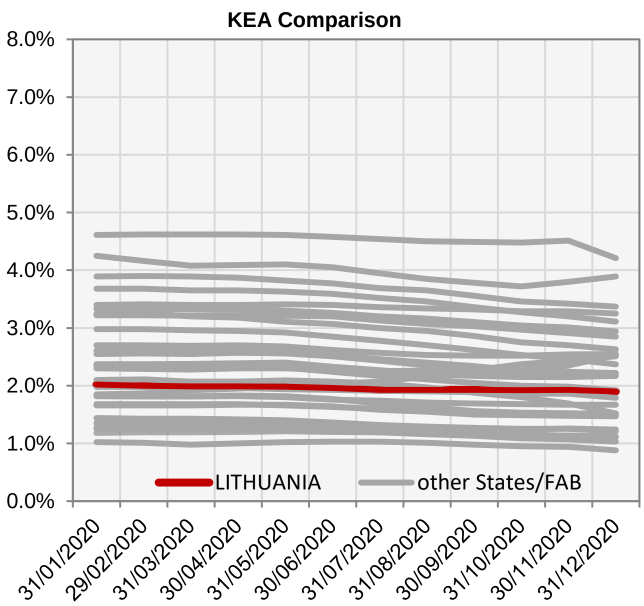
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

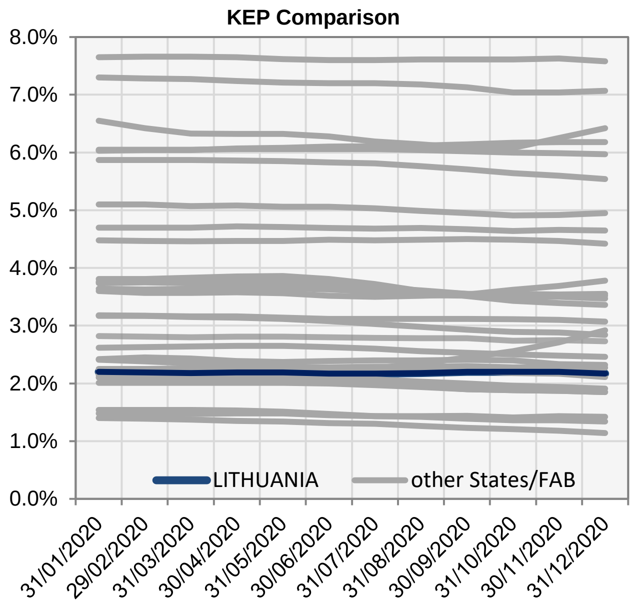
KEA	2020	2021	2022	2023	2024
Provisional target	1.90%				
Actual performance	1.90%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.02%	2.00%	1.99%	1.99%	1.98%	1.96%	1.93%	1.93%	1.93%	1.92%	1.93%	1.90%
KEP	2.20%	2.19%	2.18%	2.19%	2.19%	2.17%	2.17%	2.18%	2.20%	2.20%	2.20%	2.17%
KES	1.66%	1.65%	1.64%	1.64%	1.64%	1.63%	1.62%	1.62%	1.63%	1.62%	1.62%	1.59%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Update on Military dimension of the plan

Environment: The procedures of cooperation between civil and military unit are always improved. Enhancement process are rolling. Process are on-going on all three levels of ASM. Procedures are prescribed in line with ERNIP guidelines. Aim to use airspace as much effective as possible. Regular meetings on airspace usage planning with civil and military stakeholders are organised - as a result strategic possible de-confliction of military exercises and aviation sport events, which required airspace reservation. Information sharing significantly increased between civ-mil airspace planners preparing AIP SUP/NOTAMs. In 2020 ad-hoc reservation of airspace (TESA - Temporary established segregated airspace) rules were revised and aligned with latest guidance provided in ERNIP.
Analysis shown, that cooperation with airspace users (segrated airspace structure owners) improved on both pre-tactical and tactical level. RSAs used only when required (look parts of this report 2.2.2. F / G / H).

During COVID-19 times of videoconferences and coordination via emails was used, to boost pre-tactical airspace planning process.

Capacity: As shown below - actual use of CDRs are higher, that provided FPLs for their usage. It shows increased and enhanced cooperation between RSAs owners and AMC/ACC.

Military - related measures implemented or planned to improve capacity

Environment: During 2020 preparation for implementation of LARA v.3.2 was executed. MIL established MIL part of AMC. Communication with civil AMC using LARA tool started in 2021. LARA v.3.2 starts its official operation from end of March 2021. Now LARA v.3.2 connected to the ATC system via FMTP. LARA v.3.2 connection to NM system via new-PENS using B2B ensured. In 2021 automated performance monitoring tool PRISMIL planned to be implemented. At the moment Lithuania using it's own monitoring and analysis tool (not automated).

Capacity: It is foreseen, that usage of LARA v.3.2 (operational from end of March 2021) connected to the ATC system should improve airspace planning and its tactical usage, which should improve capacity KPA. Most of airspace release from military side occurred during tactical phase and less then 3 hours before end of RSA use time, therefore messages on new flight execution possibilities were forwarded to aircrews via radio communication means, not using an ASM tools.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Lithuania	96%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Vilnius	96%				

Initiatives implemented or planned to improve PI#6

SE "Oro navigacija" (ANSP of Lithuania, further - ON) initiatives:
1. LARA version 3.2 implementation, which has a direct connection with the new ATC system iTEC (it helps to provide more effective ASM services). LARA v3.2. implemented in Lithuania as from end of March 2021;

2. Close cooperation with Lithuanian Military Air Force (LT MIL AF) responsible unit - staff from ON supported LARA version 3.2 implementation at LT MIL AF and the initiative was extremely successful - responsible unit started to use LARA and the data is provided into system directly from LT MIL AF. It guarantees effectiveness of ASM provision and pre-tactical possible de-confliction on MIL side;

3. ON staff are constantly improving the provision and effectiveness of ASM by analysing tendencies and trends. On of the streams are usage of ad-hoc areas (Temporary Established Segregated Area - TESA) monitoring. After execution of analysis some of TESA's, which are relevant and mostly popular amongst the airspace users, are converted into permanently established segregated airspaces (e.g. TSAs). From other side, those RSAs, which used rarely or non-used, process for their decommissioning initiated.

4. ON staff are analysing the data about usage of RSAs every quarter of the year (using local procedures and tool, which are aligned with FUA requirements), that helps to know how the design, planning, allocation and usage procedures / processes could be improved to ensure effectiveness of services and airspace availability to all interested parties. The latest important refinement was a EYTSA7 area conversion into a modular ones (divided into three separate zones EYTSA7 A/ EYTSA7B/ EYTSA7C). It ensures efficient airspace allocation and usage for all stakeholders.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Lithuania	91%				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Vilnius	91%				

Initiatives implemented or planned to improve PI#7

The information on CDR usage was provided by NM. Data in line "Number of aircraft that could have planned through those airspace structures" is the real number of aircraft flying through the CDRs. The number of real flights is bigger, because, when RSA was tactically released airplanes were directed through the optimum route (means re-opened CDRs).

SE "Oro navigacija" (ANSP of Lithuania, further - ON)initiatives:
1. LARA version 3.2 implementation, which has a direct connection with new ATC system iTEC (it helps to provide more effective ASM services). LARA v3.2. implemented in Lithuania as from end of March 2021;

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3. ON staff are constantly improving the provision and effectiveness of ASM by analysing tendencies and trends. One of the streams are usage of ad-hoc areas (Temporary Established Segregated Area - TESA) monitoring. After execution of analysis some of TESA's, which are relevant and mostly popular amongst the airspace users, are converted into permanently established segregated airspaces (e.g. TSAs). From other side, those RSAs, which used rarely or non-used, process for their decommissioning initiated.

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PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Lithuania	50%				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Vilnius	50%				

Initiatives implemented or planned to improve PI#8

At the moment in Lithuania we use practical procedures for crossing by civil aircraft of active RSAs only for TSA7B. Other active RSAs should be overflown. Number of airplanes passed through active TSA7B are quite low, because this TSA partially impacts some kind of approaches the Kaunas airport.
Other information on initiatives and actions taken in due time provided above.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.05					
Actual performance	0.00					

NSA's assessment of capacity performance

Nothing to add to this factual evidence.

Monitoring process for capacity performance

With a pragmatic view to lessen administrative burden to NSA, monitoring process was the simple one - to observe the data provided by EUROCONTROL Aviation Intelligence dashboard.

Capacity Planning

No restraints for achieving capacity targets as traffic dropped significantly. Full readiness for traffic-rebound maintaining same performance.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	28.6	31.6					Total FTE is calculated by omitting sick-leave and other absences and underworked hours. Total number of ATCO's fluctuates just slightly year from year around the optimum number for current and unchanged airspace structure. In 2020 3 new ATCOs joined ops room as there was a slight shortage of working-hands from previous periods and 2 ATCO's retired at the end of 2019.
Actual	33.2	32.6					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Lithuania experienced a traffic reduction of 54% from 2019 levels, to 139k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.05					
Deadband +/-						
Actual	0.00					

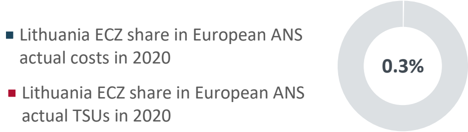
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

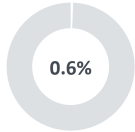
LITHUANIA: En-route Charging Zone

COST-EFFICIENCY

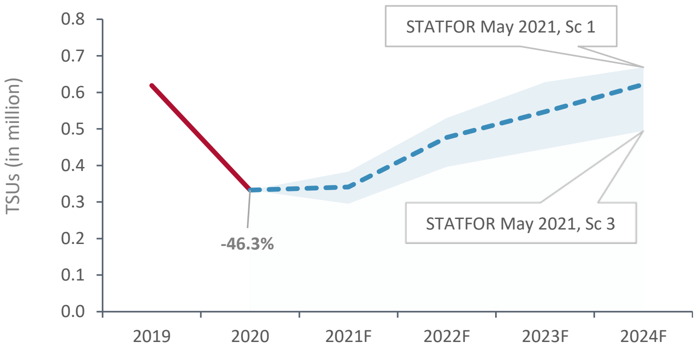
Contextual economic information: en-route air navigation services

FAB:	Baltic FAB
Main ATSP:	Oro Navigacija
National currency:	EUR

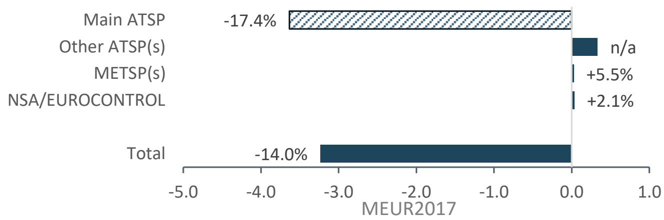




Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	22 251 561	23 929 209	20 706 120	-6.9%	-13.5%
Inflation %	1.3%	2.2%	1.1%	-0.2 p.p.	-1.1 p.p.
Real en-route costs (EUR2017)	21 301 113	23 097 882	19 864 320	-6.7%	-14.0%
Total en-route Service Units (TSUs)	309 000	618 822	332 616	+7.6%	-46.3%
Real en-route unit cost per Service Unit (EUR2017)	**68.94**	**37.33**	**59.72**	**-13.4%**	**+60.0%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were significantly lower (-13.4%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+7.6%) actual TSUs and lower (-6.7%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-46.3%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Lithuania ECZ rose substantially (+60.0% in real terms) mainly due to the exceptional -46.3% traffic reduction. In the meantime, en-route costs significantly reduced (-14.0%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: Oro Navigacija - the main ATSP (-17.4%), the MET service provider (+5.5%), the NSA/EUROCONTROL (+2.1%) as well as reporting of other ATSP operating in the CZ as of 2020. A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Oro Navigacija en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	11 752 361	13 774 580	10 855 335	-7.6%	-21.2%
Other operating costs	3 027 327	3 239 926	2 600 732	-14.1%	-19.7%
Depreciation	2 635 600	2 556 739	2 581 169	-2.1%	+1.0%
Cost of capital	1 101 210	1 275 287	1 175 564	+6.8%	-7.8%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total Oro Navigacija en-route costs	**18 516 499**	**20 846 532**	**17 212 800**	**-7.0%**	**-17.4%**

Analysis at main ATSP level

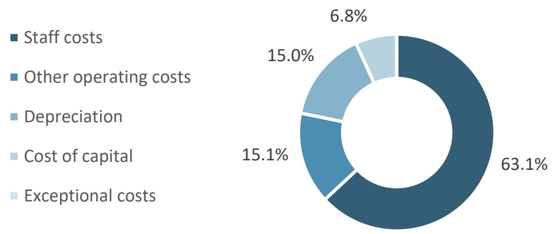
In 2020, Oro Navigacija actual en-route costs were lower (-7.0%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Oro Navigacija actual 2020 en-route costs are significantly lower (-17.4%, or -3.6 MEUR2017) compared to those reported in 2019. This results from the combination of:

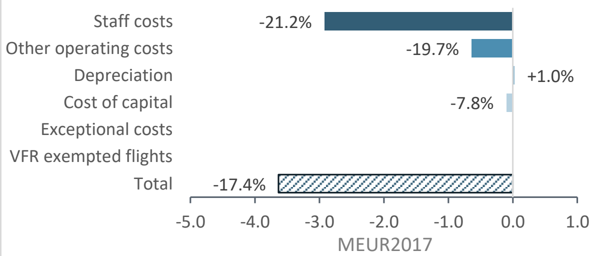
- significantly lower staff costs (-21.2%, or -2.9 MEUR2017);
- significantly lower other operating costs (-19.7%, or -0.6 MEUR2017);
- slightly higher depreciation costs (+1.0%, or +0.02 MEUR2017);
- lower cost of capital (-7.8%, or -0.1 MEUR2017).

Oro Navigacija implemented measures that affected headcounts, new recruitment, payment of variable part of salary, travel and training expenses, postponement of office maintenance, acquisitions and refurbishments.

Oro Navigacija actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



Lithuania terminal charging zone(s) are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted and no analysis is performed for monitoring purposes.

Notes on data and information submitted by Lithuania

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Annual Monitoring Report 2020

Local level view

Malta

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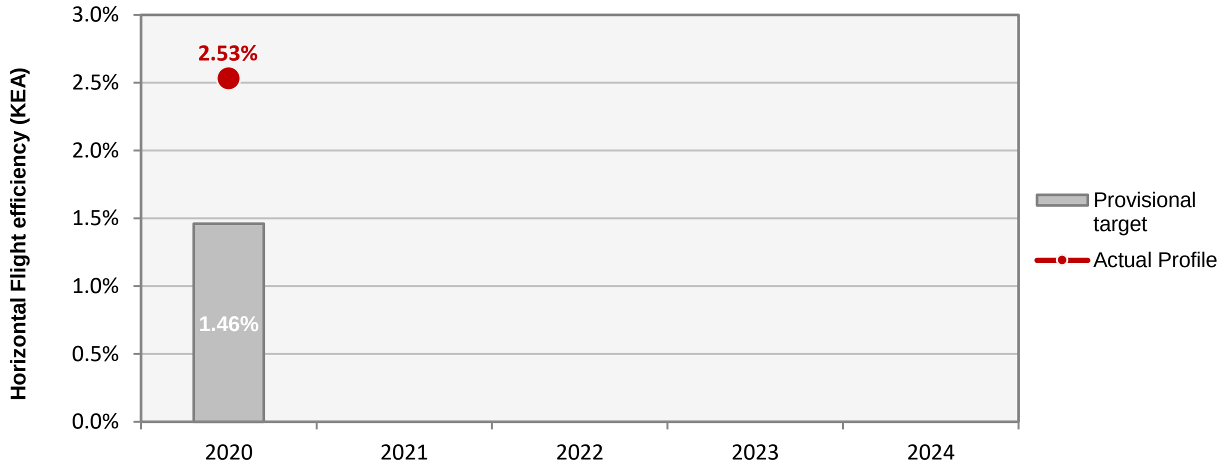
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
MATS	98	C	D	D	C	D

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

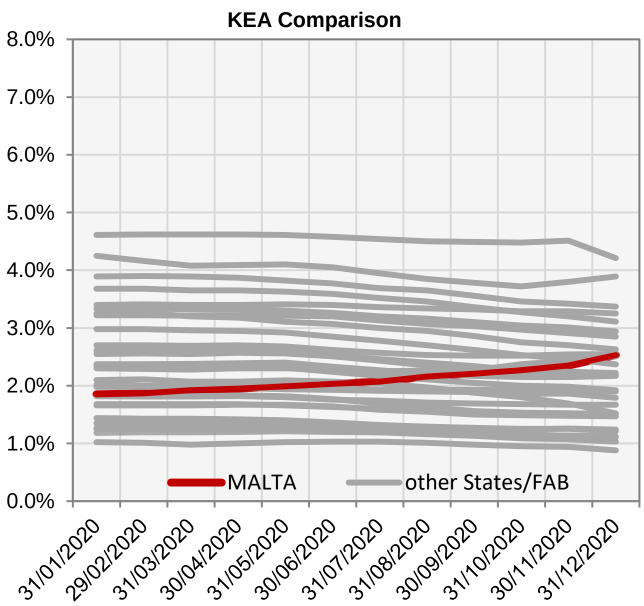
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

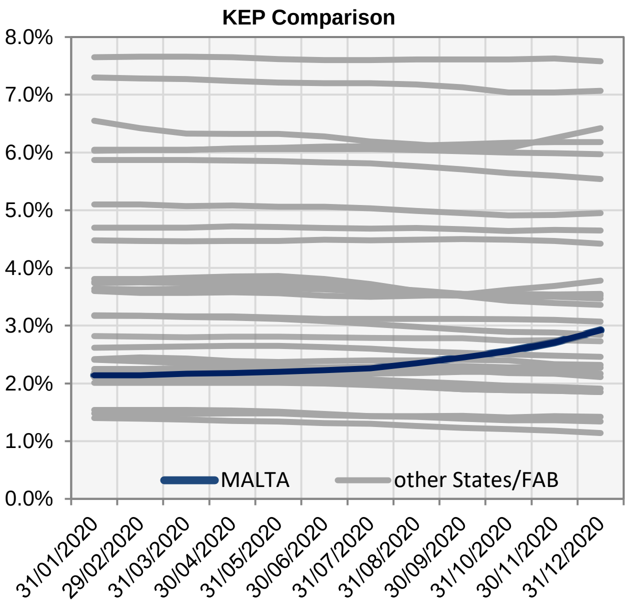
KEA	2020	2021	2022	2023	2024
Provisional target	1.46%				
Actual performance	2.53%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.85%	1.87%	1.92%	1.95%	1.99%	2.03%	2.07%	2.16%	2.21%	2.27%	2.35%	2.53%
KEP	2.14%	2.14%	2.17%	2.18%	2.20%	2.23%	2.26%	2.35%	2.45%	2.56%	2.71%	2.92%
KES	1.46%	1.47%	1.51%	1.53%	1.57%	1.62%	1.68%	1.76%	1.81%	1.87%	1.94%	2.05%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

The scope of RP3 monitoring for Malta comprises the main airport (LMML), where traffic decreased by 58% in 2020 compared to the previous year, after an important increase during RP2 (+38%).
In accordance with IR (EU) 2019/317 and the traffic volume, additional taxi-out and ASMA times are not monitored at this airport and the environmental performance focuses only on the share of arrivals applying CDO.
The share of CDO flights is in the higher range of all observed values in 2020.

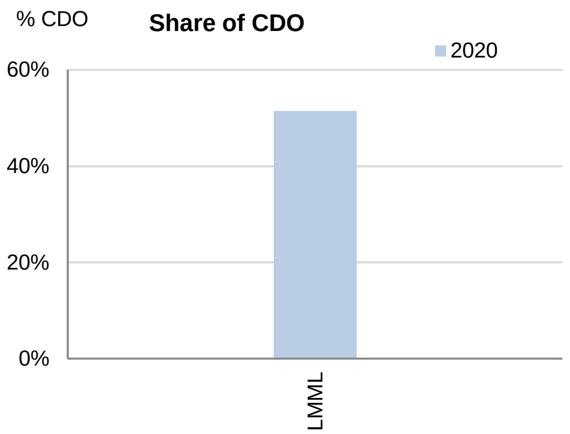
2. Additional Taxi-Out Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Malta.

3. Additional ASMA Time

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Malta.

4. Share of arrivals applying CDO



The share of CDO flights at Malta (LMML) is 51.4% which is well above the overall RP3 value in 2020 (32.5%) and in the higher range of all observed values in 2020.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Malta-LMML	-					-					51%				

Update on Military dimension of the plan

Military - related measures implemented or planned to improve capacity

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Malta	#N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Malta	#N/A				

Initiatives implemented or planned to improve PI#6

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Malta	#N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Malta	#N/A				

Initiatives implemented or planned to improve PI#7

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Malta	#N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Malta	#N/A				

Initiatives implemented or planned to improve PI#8

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.02					
Actual performance	0.00					

NSA's assessment of capacity performance

No information provided.

Monitoring process for capacity performance

No information provided.

Capacity Planning

No information provided.

ATCO in OPS (FTE)							
	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	50	54					No information provided
Actual							

Application of Corrective Measures for Capacity (if applicable)

No information provided.

Summary of capacity performance

Malta experienced a traffic reduction of 54% from 2019 levels, to 139k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

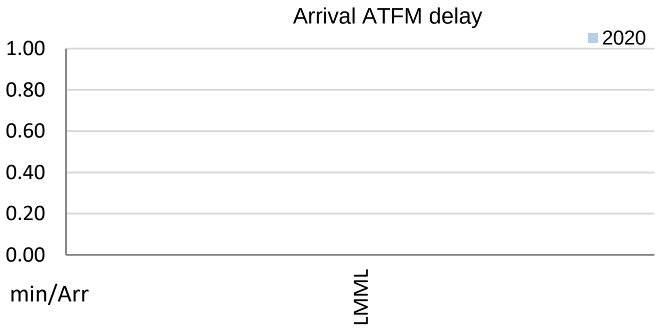
En route Capacity Incentive Scheme						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.02					No information provided.
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

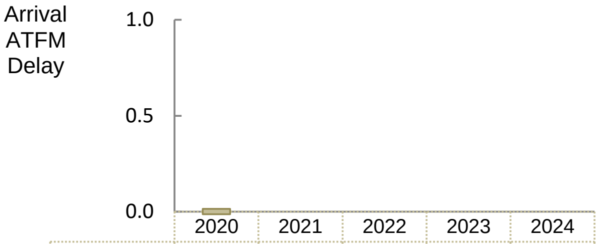
The scope of RP3 monitoring for Malta comprises the main airport (LMML), where traffic decreased by 58% in 2020 compared to the previous year, after an important increase during RP2 (+38%).
In accordance with IR (EU) 2019/317 and the traffic volume, pre-departure delays are not monitored at Malta and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.
Zero arrival ATFM delays were registered in 2020 and slot adherence was 97.1%.

2. Arrival ATFM Delay



No arrival ATFM delay was observed at Malta in 2020, in line with the performance during RP2.

3. Arrival ATFM Delay – National Target and Incentive Scheme

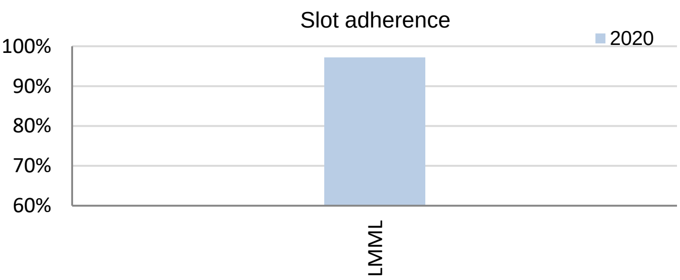


	2020	2021	2022	2023	2024
Actual	0.00				
Target	0.00				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Malta virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Malta's ATFM slot compliance was 97.1%. In the entire year, only 3 flights departed ahead of the STW, and 14 departed after.

5. ATC Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Malta.

6. All Causes Pre-departure Delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Malta.

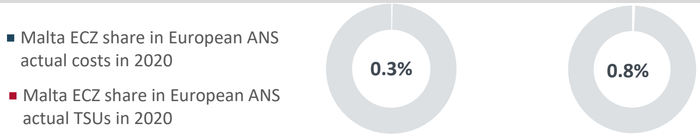
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

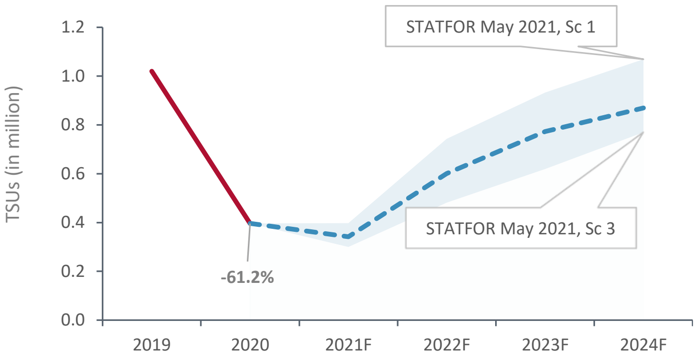
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Malta-LMML	0					97.1%					-					-				

Contextual economic information: en-route air navigation services

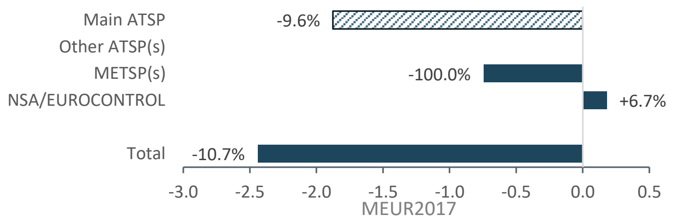
FAB:	BLUE MED FAB
Main ATSP:	MATS
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	21 417 246	23 443 684	21 055 129	-1.7%	-10.2%
Inflation %	0.9%	1.5%	0.8%	-0.1 p.p.	-0.7 p.p.
Real en-route costs (EUR2017)	20 781 452	22 900 841	20 458 922	-1.6%	-10.7%
Total en-route Service Units (TSUs)	370 000	1 019 977	395 964	+7.0%	-61.2%
Real en-route unit cost per Service Unit (EUR2017)	**56.17**	**22.45**	**51.67**	**-8.0%**	**+130.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-8.0%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+7.0%) actual TSUs and slightly lower (-1.6%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-61.2%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Malta ECZ rose substantially (+130.1% in real terms) mainly due to the exceptional -61.2% traffic reduction. In the meantime, en-route costs significantly reduced (-10.7%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: MATS - the main ATSP (-9.6%) and the NSA/EUROCONTROL (+6.7%). It should also be noted that as of RP3, the costs of meteorological services in ECZ are included under the main ATSP - MATS and no longer reported separately, thus affecting the level of en-route costs for MATS in 2020.
A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of MATS en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	8 190 142	9 660 812	8 252 247	+0.8%	-14.6%
Other operating costs	6 502 737	6 552 647	6 464 165	-0.6%	-1.4%
Depreciation	2 175 094	2 217 794	2 183 808	+0.4%	-1.5%
Cost of capital	406 025	1 029 801	684 148	+68.5%	-33.6%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total MATS en-route costs	**17 273 998**	**19 461 054**	**17 584 368**	**+1.8%**	**-9.6%**

Analysis at main ATSP level

In 2020, MATS actual en-route costs were slightly higher (+1.8%) compared to those reported in the initial plans submitted in December 2020.

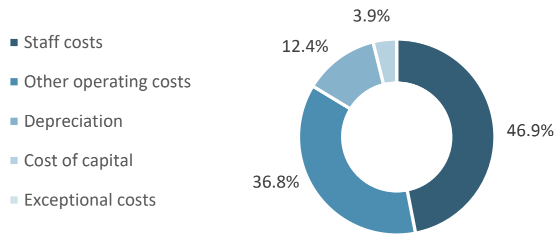
As indicated in the text box above, MATS actual 2020 en-route costs are lower (-9.6%, or -1.9 MEUR2017) compared to those reported in 2019. This results from the combination of:

- significantly lower staff costs (-14.6%, or -1.4 MEUR2017);
- slightly lower other operating costs (-1.4%, or -0.1 MEUR2017);
- slightly lower depreciation costs (-1.5%, or -0.03 MEUR2017);
- significantly lower cost of capital (-33.6%, or -0.3 MEUR2017).

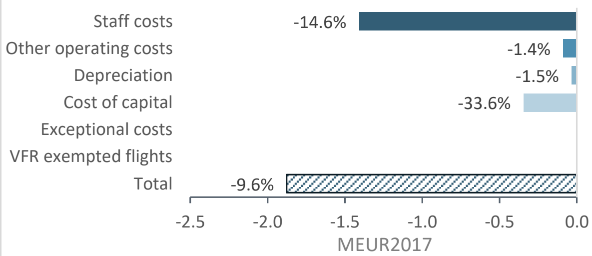
It should be noted that the level of 2020 costs for MATS in ECZ is affected by the change in reporting of MET costs, which were previously reported under a separate entity in the ECZ.

Extraordinary measures implemented by MATS included suspension of overtime, travel expenses and new CAPEX.

MATS actual 2020 en-route costs by nature



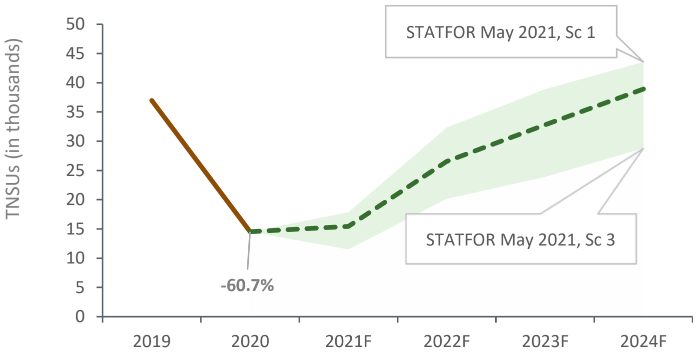
Actual costs variation by nature between 2019 and 2020



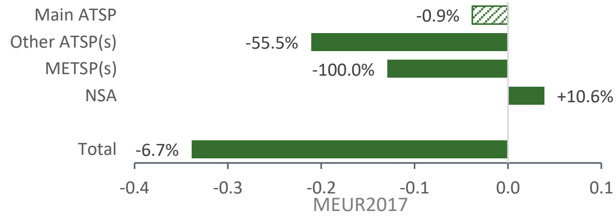
Contextual economic information: terminal air navigation services

Main ATSP:	MATS
National currency:	EUR
Number of airports in TCZ:	1

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	5 184 269	4 871 893	-6.0%
Inflation %	1.5%	0.8%	-0.7 p.p.
Real terminal costs (EUR2017)	5 066 275	4 727 483	-6.7%
Total Terminal Navigation Service Units	36 972	14 528	-60.7%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**137.03**	**325.41**	**+137.5%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Malta TCZ comprises only Luqa airport.

Between 2019 and 2020, the terminal unit costs of Malta TCZ rose substantially (+137.5% in real terms) mainly due to the exceptional -60.7% traffic reduction. In the meantime, terminal costs decreased (-6.7%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-60.7%) is expected to be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: MATS - the main ATSP (-0.9%), the other ATSP operating in the TCZ - Malta International Airport MIA (-55.5%) and the NSA (+10.6%). It should also be noted that as of RP3, the costs of meteorological services in TCZ are included under the main ATSP - MATS and no longer reported separately, thus affecting the level of terminal costs for MATS in 2020.
A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of MATS Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	2 263 459	2 045 914	-9.6%
Other operating costs	1 049 814	1 349 476	+28.5%
Depreciation	665 286	615 946	-7.4%
Cost of capital	210 923	140 000	-33.6%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total MATS terminal costs in TCZ	**4 189 482**	**4 151 335**	**-0.9%**

Analysis at main ATSP level

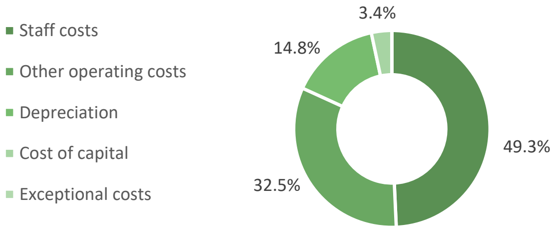
As indicated in the text box above, MATS actual 2020 terminal costs in TCZ are slightly lower (-0.9%, or -0.04 MEUR2017) than those reported in 2019. This results from the combination of:

- lower staff costs (-9.6%, or -0.2 MEUR2017);
- significantly higher other operating costs (+28.5%, or +0.3 MEUR2017);
- lower depreciation costs (-7.4%, or -0.05 MEUR2017);
- significantly lower cost of capital (-33.6%, or -0.1 MEUR2017).

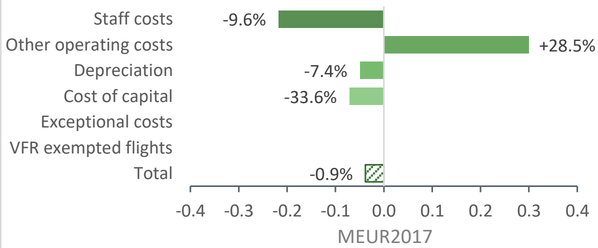
It should be noted that the level of 2020 costs for MATS in TCZ is affected by the change in reporting of MET costs, which were previously reported under a separate entity in the TCZ.

Furthermore, the extraordinary measures implemented by MATS included suspension of overtime, travel expenses and new CAPEX.

MATS actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	22 900 841	20 458 922	-10.7%
Real terminal costs (EUR2017)	5 066 275	4 727 483	-6.7%
Real gate-to-gate costs (EUR2017)	27 967 117	25 186 405	-9.9%
En-route share in gate-to-gate costs (%)	**81.9%**	**81.2%**	**-0.7 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Malta decreased (-9.9%, or -2.8 MEUR2017) in real terms. This is a combination of a reduction (-10.7%, or -2.4 MEUR2017) in en-route and a decrease (-6.7%, or -0.3 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (81.2%) slightly reduced (-0.7 p.p.) compared to the figure reported in 2019 (81.9%).

Breakdown of MATS gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	11 924 271	10 298 161	-13.6%
Other operating costs	7 602 462	7 813 641	+2.8%
Depreciation	2 883 080	2 799 754	-2.9%
Cost of capital	1 240 724	824 148	-33.6%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total MATS gate-to-gate costs	**23 650 536**	**21 735 704**	**-8.1%**

Analysis at main ATSP level

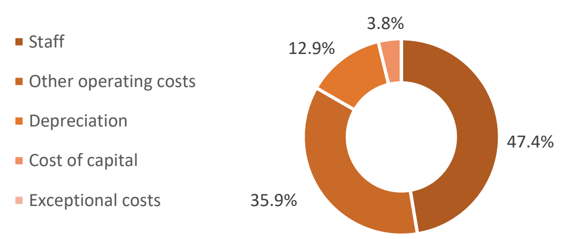
MATS actual 2020 gate-to-gate costs are lower (-8.1%, or -1.9 MEUR2017) than those reported in 2019. This results from the combination of:

- lower staff costs (-13.6%, or -1.6 MEUR2017);
- higher other operating costs (+2.8%, or +0.2 MEUR2017);
- lower depreciation costs (-2.9%, or -0.1 MEUR2017);
- significantly lower cost of capital (-33.6%, or -0.4 MEUR2017).

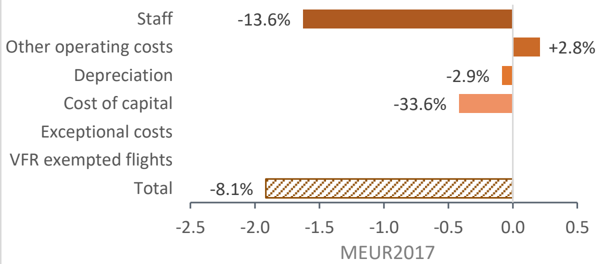
It should be noted that the level of 2020 gate-to-gate costs for MATS is affected by the change in reporting of MET costs, which were previously reported under a separate entity.

Details on the drivers behind the changes observed above are provided in the respective analyses of MATS at en-route and terminal charging zone level.

MATS actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Malta

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Annual Monitoring Report 2020

Local level view

Norway

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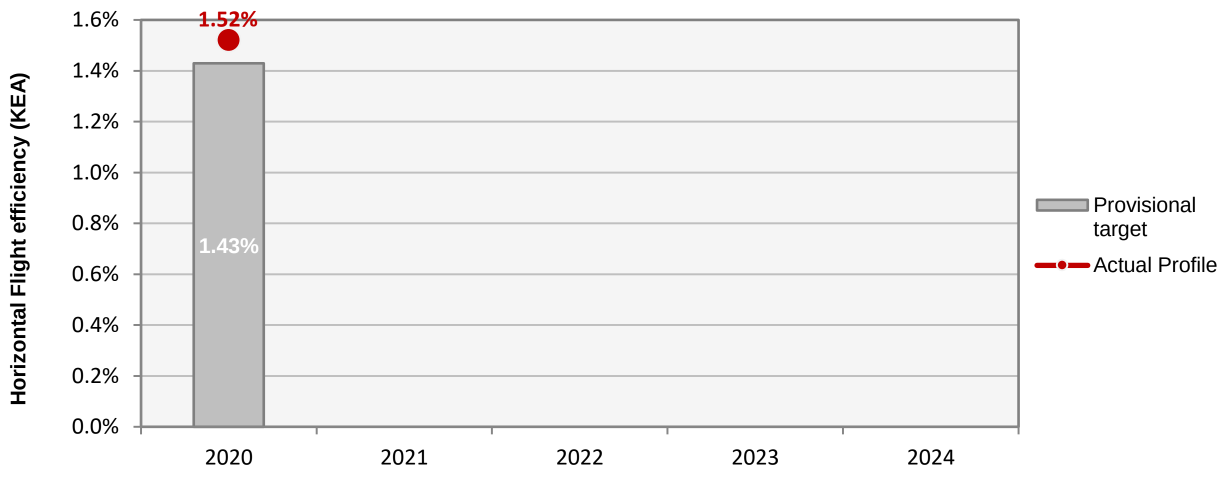
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Avinor	94	D	C	D	C	C
Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.						

Observations

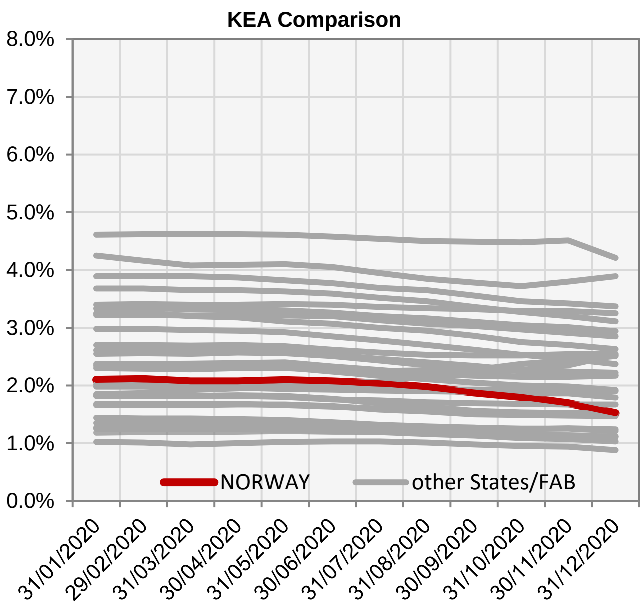
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

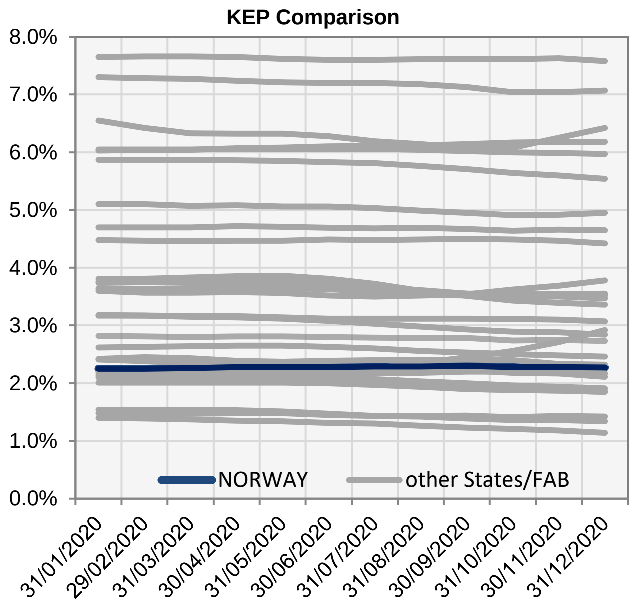
KEA	2020	2021	2022	2023	2024
Provisional target	1.43%				
Actual performance	1.52%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.10%	2.11%	2.07%	2.07%	2.09%	2.07%	2.04%	1.97%	1.88%	1.80%	1.69%	1.52%
KEP	2.25%	2.25%	2.26%	2.28%	2.28%	2.28%	2.29%	2.29%	2.30%	2.28%	2.28%	2.27%
KES	2.04%	2.04%	2.04%	2.06%	2.05%	2.05%	2.05%	2.05%	2.05%	2.04%	2.04%	2.04%



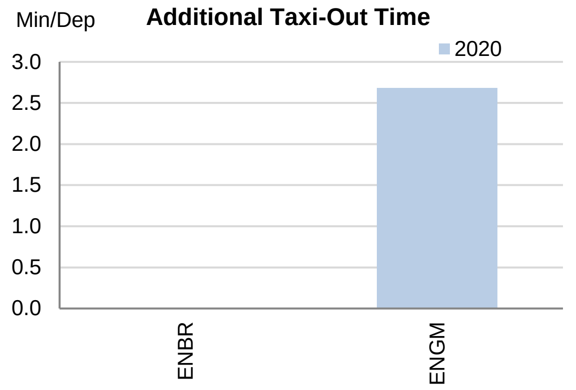


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

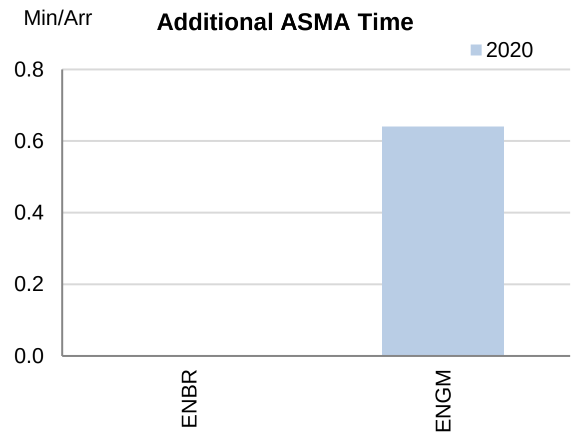
Norway has identified four airports as subject to RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Oslo (EGNM) and Bergen (ENBR)) must be monitored for additional taxi-out and ASMA times. Oslo (A-CDM implemented) is the only Norwegian airport that has finished the full implementation of the Airport Operator Data Flow required for the monitoring of additional times. As reported in RP2, it seems the ATM system is not ready to implement the APDF at Bergen. Avinor Flysikring AS, the service provider in Norway, is still considering alternate solution, but needs to take into account the additional cost required.
Traffic at the ensemble of these four Norwegian airports decreased by 43% in 2020 compared to 2019.
Additional times at Oslo showed a drastic reduction in line with the very low traffic, but they increased notably again at the end of the year.
The share of CDO flights is in the higher range of all observed values in 2020. Norway has the highest share of CDO flights when calculated by State.

2. Additional Taxi-Out Time



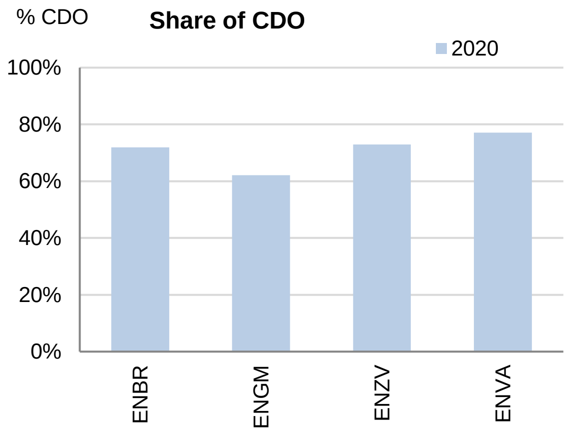
The additional taxi-out times at Oslo decreased by 32% (ENGM; 2019: 3.92 min/dep.; 2020: 2.68 min/dep.)
The annual average is influenced by the performance during the winter months due to de-icing, and in fact the longest additional times were observed in December, averaging then more than 7 min/dep. despite the lower traffic.

3. Additional ASMA Time



Additional taxi-out times at Oslo (ENGM; 2019: 1.03 min/arr.; 2020: 0.64 min/arr.) experienced a drastic impact from the traffic during the months of April to August, when they averaged zero min/arr.
At the end of the year these times increased again, but performance at Oslo remains best in class.

4. Share of arrivals applying CDO



All airports have very high shares of CDO flights with 3 airports having more than double the overall RP3 value in 2020 (32.5%). Trondheim has the highest share of CDO flights of all airports monitored in 2020 (77.1%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Bergen-ENBR	n/a					n/a					72%				
Oslo - Gardermoen-ENGM	2.68					0.64					62%				
Stavanger-ENZV	-					-					73%				
Trondheim-ENVA	-					-					77%				

Update on Military dimension of the plan

There is a plan to start monitoring the military dimension of the plan as soon as the LARA tool is fully implemented and working as planned (as of now partially implemented). There will also be continued focus on the effectiveness of the booking procedures. After the implementation of the NEFRA there have been clear indications that the NM IFPS system has some limitations on offering alternative routings and the fact that information from UUP is not feed into the system. This shows that there is a need for the NM to be more future oriented regarding system support for more advanced FRA implementation.

Military - related measures implemented or planned to improve capacity

Norway is currently conducting a revision of the AMC agreement which will establish new and larger areas in our southern airspace. The Civil/military airspace committee focus on the improvement of the booking procedures and the intention to improve the ratio between booked versus used reserved airspace. The LARA implementation will contribute to more efficient booking procedures.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Norway	56%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Bodo	N/A				
Oslo	N/A				
Stavanger	N/A				

Initiatives implemented or planned to improve PI#6

Norway reports an improvement from 2019 (51%). Norway also reports that no data is available per ACC.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Norway	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Bodo	N/A				
Oslo	N/A				
Stavanger	N/A				

Initiatives implemented or planned to improve PI#7

No data available per ACC

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Norway	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Bodo	N/A				
Oslo	N/A				
Stavanger	N/A				

Initiatives implemented or planned to improve PI#8

No data available per ACC

Minutes of ATFM en-route delay

	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.08					
Actual performance	0.01					

NSA's assessment of capacity performance

The actual en route ATFM delay per flight of 0,01 min./flt. in 2020 significant below the national target set to 0,08 min./flt. The delay was connected with some technical issue in start of the year 2020, delay code T - Equipment (ATC). Actual performance is far better than capacity KPA, however at same level as 2019. No major change due to the pandemic.

Monitoring process for capacity performance

Frequently at national level.

Capacity Planning

The reduction in the number of ATCO FTEs from 2019 to 2020 is due to cost efficiency measures as a consequence of COVID-19, mainly furloughs, but also voluntary redundancy agreements.

ATCO in OPS (FTE)

Bodo ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	40.2	42.0					The reduction in the number of ATCO FTEs from 2019 to 2020 is due to cost efficiency measures as a consequence of Covid-19, mainly furloughs, but also voluntary redundancy agreements.
Actual	46.3	36.7					

Oslo ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	105.0	107.0					The reduction in the number of ATCO FTEs from 2019 to 2020 is due to cost efficiency measures as a consequence of Covid-19, mainly furloughs, but also voluntary redundancy agreements.
Actual	105.2	73.1					

Stavanger ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	28.4	27.6					The reduction in the number of ATCO FTEs from 2019 to 2020 is due to cost efficiency measures as a consequence of Covid-19, mainly furloughs, but also voluntary redundancy agreements.
Actual	36.2	25.5					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Norway experienced a traffic reduction of 42% from 2019 levels, to 346k flights. The traffic level was accommodated with less than 3500 minutes of en route ATFM delays to airspace users, practically all of which was attributed to technical issues in January and November.

En route Capacity Incentive Scheme

	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.08					Incentive scheme does not involve potential bonuses, only penalties
Deadband +/-						
Actual	0.01					

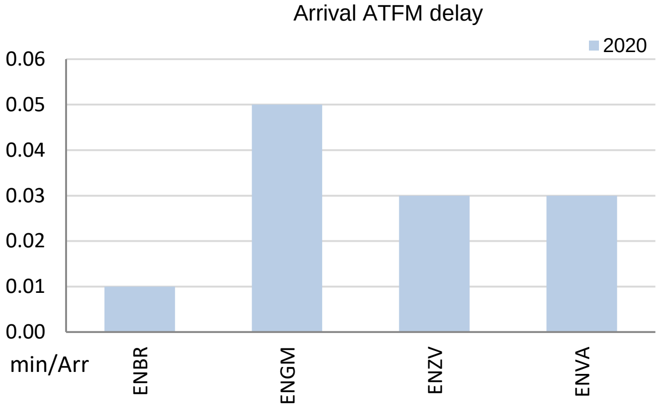
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Norway has identified four airports as subject to RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Oslo (EGNM) and Bergen (ENBR)) must be monitored for pre-departure delays. Oslo (A-CDM implemented) is the only Norwegian airport that has finished the full implementation of the Airport Operator Data Flow required for the monitoring of these pre-departure delays. As reported in RP2, it seems the ATM system is not ready to implement the APDF at Bergen. Avinor Flysikring AS, the service provider in Norway, is still considering alternate solution, but needs to take into account the additional cost required.

Traffic at the ensemble of these four Norwegian airports decreased by 43% in 2020 compared to 2019. Following the reduction in traffic, arrival ATFM delays decreased by 80% with respect to 2019. Slot adherence was well above 95% for these four airports and the all causes pre-departure delay at Oslo was the lowest in the SES area.

2. Arrival ATFM Delay



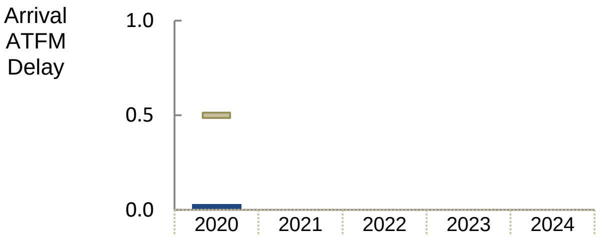
The national average arrival ATFM delay at Norwegian airports in 2020 was 0.03 min/arr, significantly lower than the 0.18 min/arr in 2019 (-80%).

At airport level, Oslo (ENGM; 2019: 0.31 min/arr; 2020: 0.05 min/arr) observed delays in the first trimester of the year all attributed to weather, but then some additional ATFM delays were recorded in October and November due to a mix of weather, aerodrome capacity and ATC equipment.

Bergen (ENBR) and Trondheim (ENVA) only had delays in February mostly attributed to weather.

Stavanger (ENZV) recorded delays only in January, associated with non-ATC equipment and other reasons.

3. Arrival ATFM Delay – National Target and Incentive Scheme

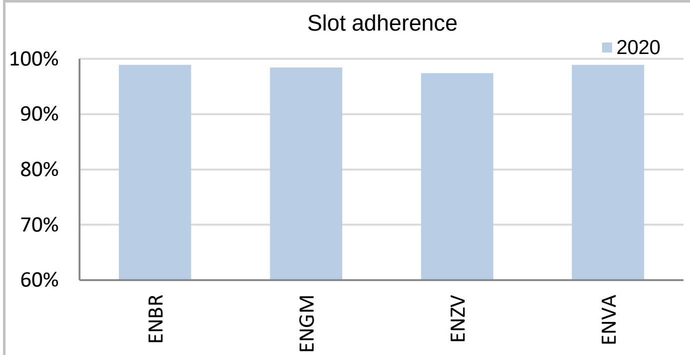


	2020	2021	2022	2023	2024
Actual	0.03				
Target	0.50				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Norwegian airports (that was already low around 3-4% in the first trimester) virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.

All Norwegian airports showed adherence above 95% and the national average was 98.4%. With regard to the 1.6% of flights that did not adhere, 0.5% was early and 1.1% was late.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Oslo but not implemented at Bergen. Therefore the monitoring of this indicator in Norway is limited to Oslo.

The performance at Oslo was already good and has improved with respect to the previous year (ENGM; 2019: 0.14 min/dep.; 2020: 0.05 min/dep.) due to the reduction in traffic.

6. All Causes Pre-departure Delay

The calculation of the All causes pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Oslo but not implemented at Bergen. Therefore the monitoring of this indicator in Norway is limited to Oslo.
The total (all causes) delay in the actual off block time at Oslo in 2020 was 5.01 min/dep. which is the lowest delay among the SES monitored airports. The higher delays per flight were observed in February and December.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

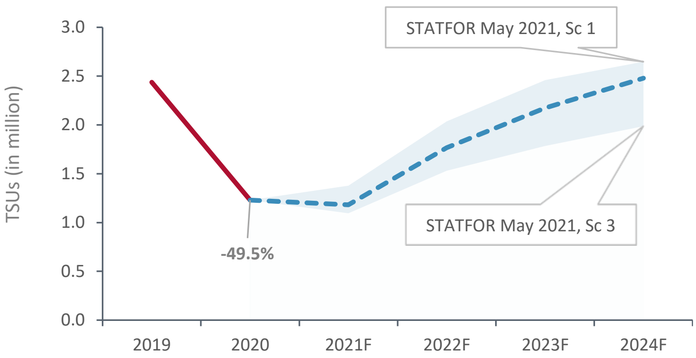
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Bergen-ENBR	0.01					98.9%					n/a					n/a				
Oslo - Gardermoen-ENGM	0.05					98.4%					0.05					5.01				
Stavanger-ENZV	0.03					97.4%					-					-				
Trondheim-ENVA	0.03					98.9%					-					-				

NORWAY: En-route Charging Zone — COST-EFFICIENCY

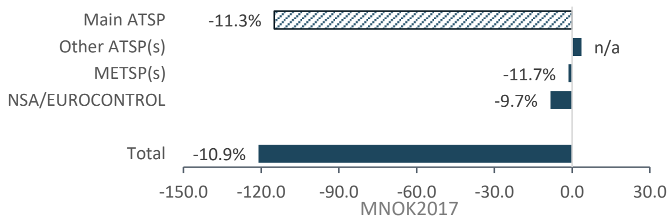
Contextual economic information: en-route air navigation services

FAB:	NEFAB
Main ATSP:	Avinor
National currency:	NOK
Exchange rate:	1 EUR = 9.32776 NOK

Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal NOK)	1 073 980 369	1 158 952 119	1 040 536 292	-3.1%	-10.2%
Inflation %	1.4%	2.3%	1.2%	-0.2 p.p.	-1.1 p.p.
Real en-route costs (NOK2017)	1 017 532 191	1 111 480 483	990 547 885	-2.7%	-10.9%
Total en-route Service Units (TSUs)	1 248 114	2 437 377	1 229 871	-1.5%	-49.5%
Real en-route unit cost per Service Unit (NOK2017)	**815.26**	**456.01**	**805.41**	**-1.2%**	**+76.6%**
Real en-route unit cost per Service Unit (EUR2017)	**87.40**	**48.89**	**86.35**	**-1.2%**	**+76.6%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were slightly lower (-1.2%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly lower (-1.5%) actual TSUs and lower (-2.7%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-49.5%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Norway ECZ rose substantially (+76.6% in real terms) mainly due to the exceptional -49.5% traffic reduction. In the meantime, en-route costs significantly reduced (-10.9%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: Avinor - the main ATSP (-11.3%), the MET service provider (-11.7%), NSA/EUROCONTROL (-9.7%) as well as reporting of other ATSP operating in the CZ as of 2020. A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Avinor en-route ANS costs (real NOK2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	729 255 634	754 491 359	638 753 018	-12.4%	-15.3%
Other operating costs	81 742 303	118 806 663	101 624 876	+24.3%	-14.5%
Depreciation	78 422 372	70 329 000	93 182 975	+18.8%	+32.5%
Cost of capital	55 138 524	71 361 000	66 476 758	+20.6%	-6.8%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total Avinor en-route costs	**944 558 833**	**1 014 988 021**	**900 037 627**	**-4.7%**	**-11.3%**

Analysis at main ATSP level

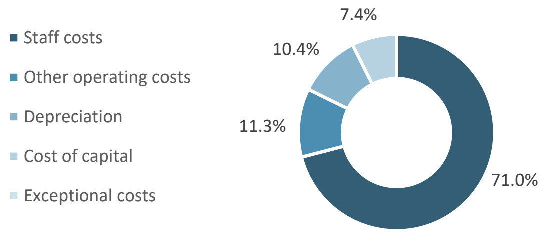
In 2020, Avinor actual en-route costs were lower (-4.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Avinor actual 2020 en-route costs are significantly lower (-11.3%, or -115.0 MNOK2017) compared to those reported in 2019. This results from the combination of:

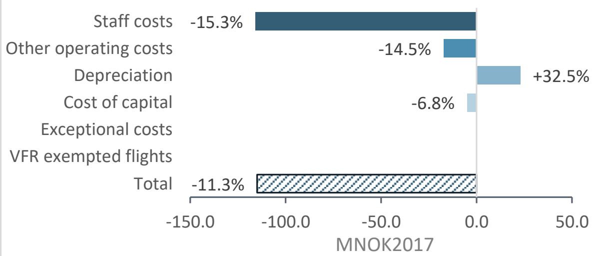
- significantly lower staff costs (-15.3%, or -115.7 MNOK2017);
- significantly lower other operating costs (-14.5%, or -17.2 MNOK2017);
- significantly higher depreciation costs (+32.5%, or +22.9 MNOK2017);
- lower cost of capital (-6.8%, or -4.9 MNOK2017).

Avinor ANS implemented cost-containment measures through furloughs both in operational and support units, volontary redundancy scheme, postponement of ATCO training, reduction of management salaries, overtime, travel and consultancy fees. In addition, Norway indicates that Avinor AS (mother company of Avinor ANS) received financial support from its owner (the Norwegian Ministry of transport) in 2020.

Avinor actual 2020 en-route costs by nature

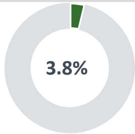


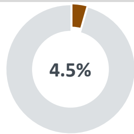
Actual costs variation by nature between 2019 and 2020



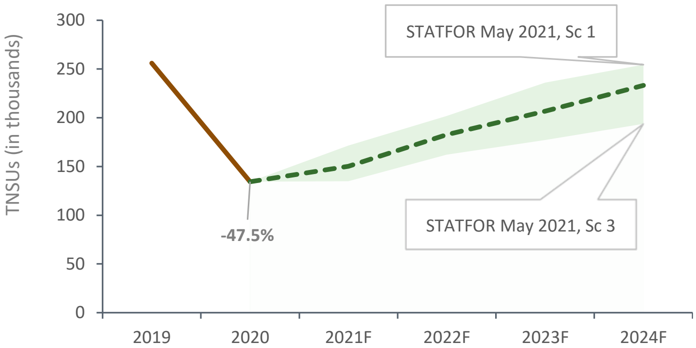
Contextual economic information: terminal air navigation services

Main ATSP:	Avinor
National currency:	NOK
Number of airports in TCZ:	4

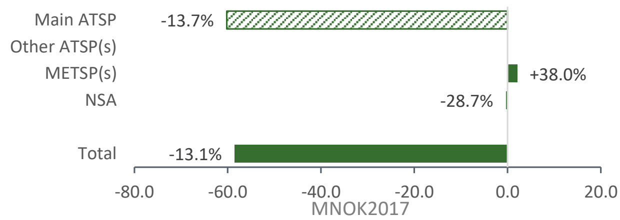




Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal NOK)	467 804 031	409 579 091	-12.4%
Inflation %	2.3%	1.2%	-1.1 p.p.
Real terminal costs (NOK2017)	446 995 434	388 508 806	-13.1%
Total Terminal Navigation Service Units	256 006	134 330	-47.5%
Real terminal unit cost per Terminal Navigation Service Unit (NOK2017)	**1 746.04**	**2 892.20**	**+65.6%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**187.19**	**310.06**	**+65.6%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Norway TCZ comprises 4 airports.

Between 2019 and 2020, the terminal unit costs of Norway TCZ rose substantially (+65.6% in real terms) mainly due to the exceptional -47.5% traffic reduction. In the meantime, terminal costs significantly reduced (-13.1%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-47.5%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: Avinor - the main ATSP (-13.7%), the MET service provider (+38.0%) and the NSA (-28.7%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of Avinor Terminal ANS costs in TCZ (real NOK2017)	2019A	2020A	2020A vs 2019A
Staff	275 000 607	220 313 880	-19.9%
Other operating costs	108 277 733	90 829 820	-16.1%
Depreciation	31 269 800	39 813 827	+27.3%
Cost of capital	27 000 198	30 232 663	+12.0%
Exceptional costs	0	0	
VFR exempted flights	-1 096 448	-942 082	-14.1%
Total Avinor terminal costs in TCZ	**440 451 890**	**380 248 108**	**-13.7%**

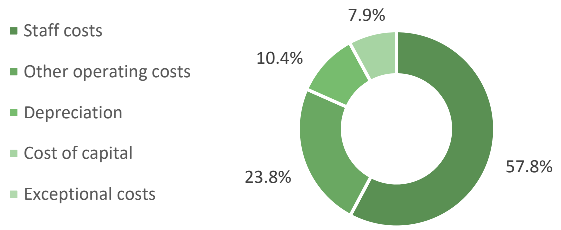
Analysis at main ATSP level

As indicated in the text box above, Avinor actual 2020 terminal costs in TCZ are significantly lower (-13.7%, or -60.2 MNOK2017) than those reported in 2019. This results from the combination of:

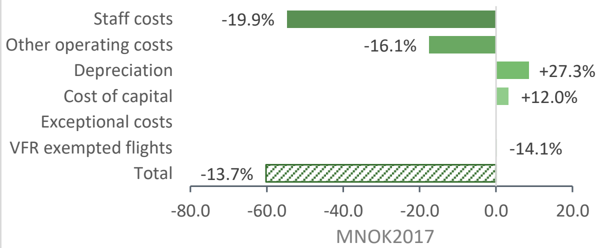
- significantly lower staff costs (-19.9%, or -54.7 MNOK2017);
- significantly lower other operating costs (-16.1%, or -17.4 MNOK2017);
- significantly higher depreciation costs (+27.3%, or +8.5 MNOK2017);
- significantly higher cost of capital (+12.0%, or +3.2 MNOK2017);
- significantly lower deduction for VFR exempted flights (-14.1%).

Lower terminal costs are mainly due to changes in cost allocation of approach costs between terminal and en-route services. In addition, Avinor ANS implemented cost-containment measures through furloughs both in operational and support units, volontary redundancy scheme, postponement of ATCO training, reduction of management salaries, overtime, travel and consultancy fees. In addition, Norway indicates that Avinor AS (mother company of Avinor ANS) received financial support from its owner (the Norwegian Ministry of transport) in 2020.

Avinor actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (NOK2017)	1 111 480 483	990 547 885	-10.9%
Real terminal costs (NOK2017)	446 995 434	388 508 806	-13.1%
Real gate-to-gate costs (NOK2017)	1 558 475 917	1 379 056 691	-11.5%
En-route share in gate-to-gate costs (%)	**71.3%**	**71.8%**	**+0.5 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Norway decreased (-11.5%, or -179.4 MNOK2017) in real terms. This is a combination of a reduction (-10.9%, or -120.9 MNOK2017) in en-route and a decrease (-13.1%, or -58.5 MNOK2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (71.8%) slightly rose (+0.5 p.p.) compared to the figure reported in 2019 (71.3%).

Breakdown of Avinor gate-to-gate ANS costs (real NOK2017)	2019A	2020A	2020A vs 2019A
Staff	1 029 491 966	859 066 898	-16.6%
Other operating costs	227 084 396	192 454 696	-15.2%
Depreciation	101 598 800	132 996 802	+30.9%
Cost of capital	98 361 198	96 709 421	-1.7%
Exceptional costs	0	0	
VFR exempted flights	-1 096 448	-942 082	-14.1%
Total Avinor gate-to-gate costs	**1 455 439 912**	**1 280 285 735**	**-12.0%**

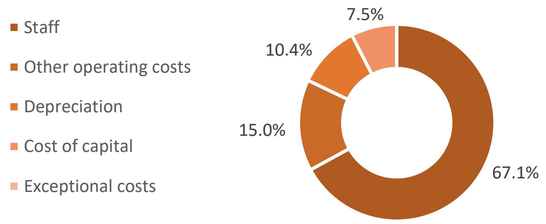
Analysis at main ATSP level

Avinor actual 2020 gate-to-gate costs are lower (-12.0%, or -175.2 MNOK2017) than those reported in 2019. This results from the combination of:

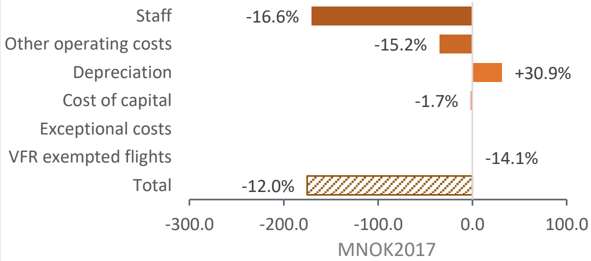
- significantly lower staff costs (-16.6%, or -170.4 MNOK2017);
- significantly lower other operating costs (-15.2%, or -34.6 MNOK2017);
- significantly higher depreciation costs (+30.9%, or +31.4 MNOK2017);
- slightly lower cost of capital (-1.7%, or -1.7 MNOK2017);
- lower deduction for VFR exempted flights (-14.1%).

Details on the drivers behind the changes observed above are provided in the respective analyses of Avinor at en-route and terminal charging zone level.

Avinor actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Norway

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Annual Monitoring Report 2020
Local level view
Poland

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Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
PANSA	98	D	C	D	C	D
Port Lotniczy Bydgoszcz S.A.		C	C	C	C	C
Warmia i Mazury sp. z o.o.		C	C	C	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

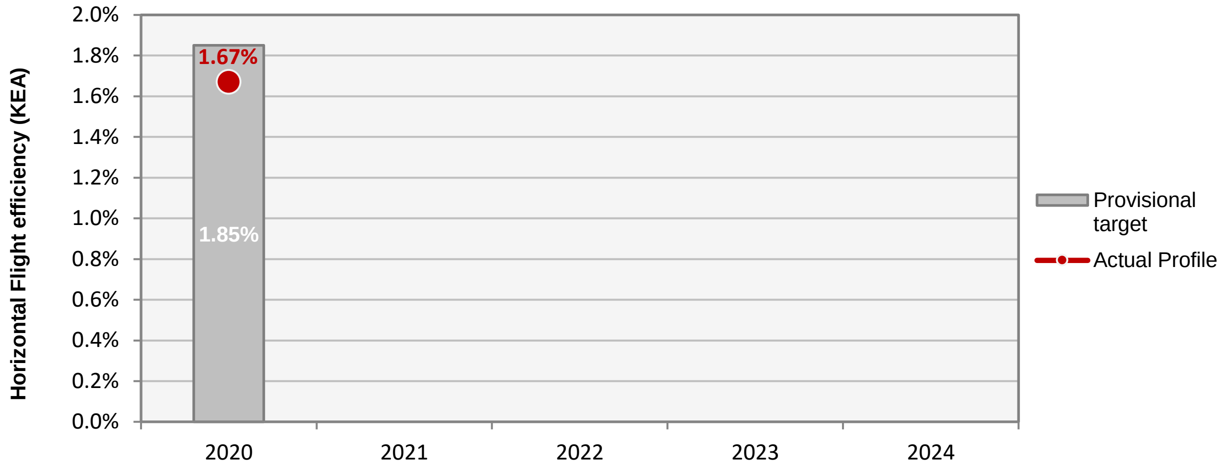
Observations

All five EoSM components of PANSA meet, or exceed, already the 2024 target level.

Four out of five EoSM components of Port Lotniczy meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets. Same situation is applicable to Warmia i Mazury.

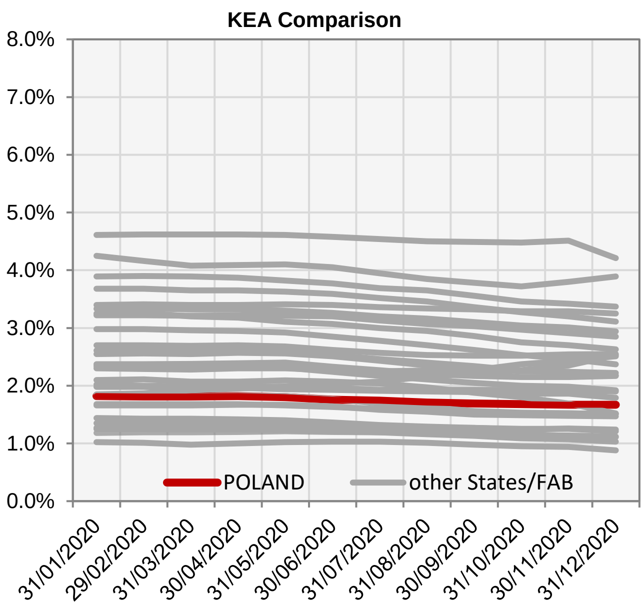
KEA

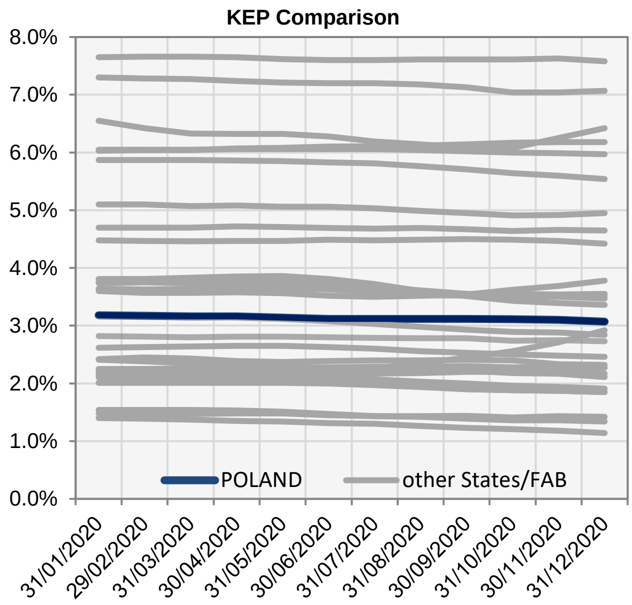
	2020	2021	2022	2023	2024
Provisional target	1.85%				
Actual performance	1.67%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.82%	1.81%	1.81%	1.82%	1.80%	1.76%	1.74%	1.71%	1.69%	1.68%	1.67%	1.67%
KEP	3.18%	3.17%	3.16%	3.16%	3.14%	3.12%	3.12%	3.12%	3.12%	3.11%	3.10%	3.07%
KES	2.54%	2.52%	2.51%	2.51%	2.49%	2.47%	2.47%	2.47%	2.47%	2.47%	2.45%	2.42%



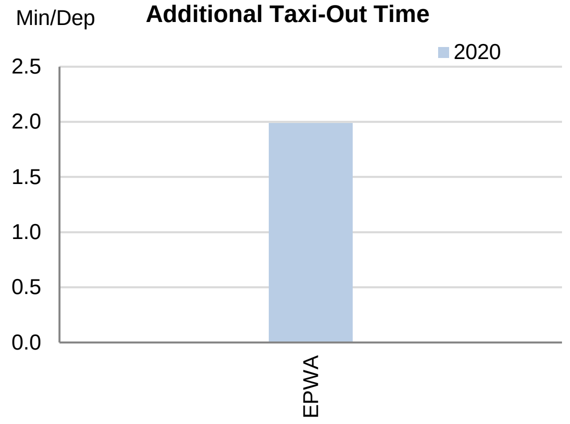


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

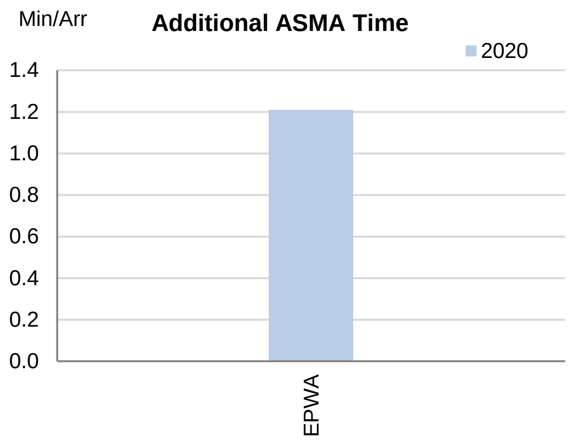
For Poland the scope of the RP3 monitoring comprises a total of 15 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only the main airport Warsaw (EPWA) must be monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.
Traffic at the ensemble of these 15 airports decreased in 2020 by 56%. At Warsaw this reduction was 59%.
Both additional times considerably improved as of the month of April, when traffic plummeted, resulting in annual times 42% shorter than in 2019.
The shares of CDO flights are in general relatively high in 2020.

2. Additional Taxi-Out Time



Additional taxi-out times at Warsaw (EPWA; 2019: 3.43 min/dep.; 2020: 1.99 min/dep.) notably decreased thanks to the traffic reduction but it is also the effect of the longer taxi-out times in 2019 associated with works on the runways and taxiways.
From April until November these times averaged 1.04 min/dep. although in December they went back to 2.34 min/dep. probably associated with de-icing procedures.
The Polish NSA reports that A-CDM was implemented in 2020 at Warsaw, which should also help reduce these additional taxi-out times. In addition, it is planned to implement a Traffic Complexity tool by 2021 and A-SMGCS by 2024.

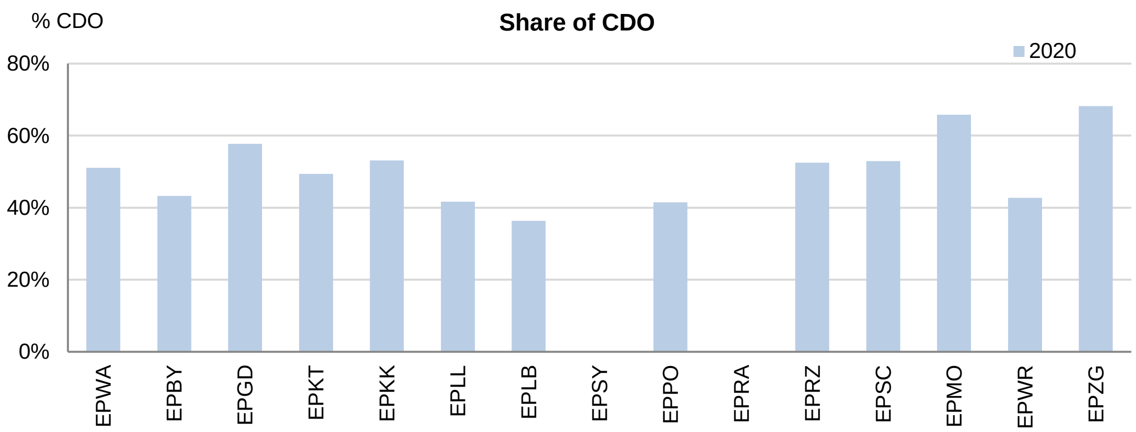
3. Additional ASMA Time



Additional times in the terminal airspace of Warsaw (EPWA; 2019: 2.09 min/arr.; 2020: 1.21 min/arr.) follow a similar pattern to the additional taxi-out times, with much lower times as of April, averaging 0.49 min/arr. in the period April-December 2020.

The Polish NSA reports that Arrival Manager (AMAN) (2019) was implemented in 2019 and that a TMA reconfiguration & resectorization, including new SID/STAR procedures is planned for 2021.

4. Share of arrivals applying CDO



All airports have shares of CDO flights (well) above the overall RP3 value in 2020 (32.5%) with values ranging from 36.3% to 68.1%.
The use of Arrival Manager since 2019 at EPWA probably contributed to the high share of CDO flights for Warsaw (EPWA: 51.1%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Warszawa - Chopina-EPWA	1.99					1.21					51%				
Bydgoszcz-EPBY	-					-					43%				
Gdansk-EPGD	-					-					58%				
Katowice - Pyrzowice-EPKT	-					-					49%				
Krakow - Balice-EPKK	-					-					53%				
Lodz - Lublinek-EPLL	-					-					42%				
Lublin-EPLB	-					-					36%				
Olsztyn-Mazury-EPSY	-					-					n/a				
Poznan - Lawica-EPPO	-					-					41%				
Radom-EPRA	-					-					n/a				
Rzeszow - Jasionka-EPRZ	-					-					52%				
Szczecin - Goleniów-EPSC	-					-					53%				
Warszawa - Modlin-EPMO	-					-					66%				
Wroclaw - Strachowice-EPWR	-					-					43%				
Zielona Gora - Babimost-EPZG	-					-					68%				

Update on Military dimension of the plan

There are over 20 permanent military areas extending over FL95 in FIR EPWW that have impact on civil traffic flows and thereby can influence the horizontal flight efficiency indicator. Additionally in FIR EPWW recurring significant multinational NATO military exercises are held including: Anakonda, Astral Knight, AV-DET Rotation, Baltops, Defender, Dragon, Rammstein Guard, Tobruq Legacy. Due to large scale of those exercises there are aircraft stopovers and regroupings on military aerodromes in FIR EPWW that increase the load on ACC GAT and OAT Warszawa that might impact the route efficiency of civil aircrafts. Military aerodromes, including EPLK, EPKS, EPPW, EPMM, are located nearby the main civil aerodromes.
There are agreed procedures and LoA signed between PANSA and the Military side describing the process of airspace management at pre-tactical and tactical level in order to optimise its use. The procedures are continuously updated according to the current needs of both the civilian and military sides. The local ASM system (CAT) automatically exchanges the data with the Network Manager system. ASM information is available in ATM system, additionally published on website.

Military - related measures implemented or planned to improve capacity

On strategic airspace management level all significant military exercises and permanent military areas are evaluated and analysed taking into account historic civil traffic flows and civil traffic predictions. The impact is consulted with the key stakeholders including neighbouring states, aerodrome operators, aircraft operators, ATS, the military, EUROCONTROL NM.

The locations of the military activities are, whenever possible, designed to not affect the main traffic flows, ATC routes, DCTs and POLFRA connectivity. Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.

Military areas are always divided into smaller modules/segments. Each of these segments is designed in order to fit particular military activities without necessity to activate the whole area to perform specific military training assignments. The shape of these segments is always aligned with main civil traffic flows to minimize the horizontal flight inefficiency.
Special procedures are prepared including dynamic change of level or segment and creation of new temporary routings for avoidance of military traffic. Special coordination points are prepared in advance to improve the cooperation between military aircrafts and ATC arriving/departing to/from military areas. The information flow is guaranteed by internal procedures and Supporting Self Check-in Documents System.

Further measures planned to be implemented include:
- improvement/automation of exchange of information about military activity in segregated areas, especially on tactical level. Update of coordination procedures and local ASM support tool/system, which will reduce time required to release segregated areas back to civil traffic.
- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures taking into account forecasted demand of civil traffic on segregated airspace allocation in time on day of the operations.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Poland	36%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Warsaw	36%				

Initiatives implemented or planned to improve PI#6

On strategic airspace management level all significant exercises and permanent areas are evaluated and analyzed taking into account historic civil traffic flows and civil traffic predictions.
The impact, depending on scale, is consulted with the key stakeholders including neighbouring states, aerodrome operators, aircraft operators, ATS, military, EUROCONTROL NM.

The lateral and vertical limits of the airspace elements published are designated considering the actual needs of users and nature of activities. All airspace elements shall be planned only for the time period necessary to perform the intended task. The user is obliged to specify precisely the period of activity of a selected element and all timely suspensions of activity between these periods

The locations of the activities are designed not to affect the main traffic flows, ATC routes, DCTs and POLFRA connectivity. Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.
When the areas excess the set scale they are always divided into smaller modules/segments. Each of these segments is designed in order to fit particular activities without necessity to activate the whole area to perform specific assignments. The shape of these segments is always aligned with main civil traffic flows to minimize the horizontal flight inefficiency.

Further measures planned to be implemented include:
- improvement/automation of exchange of information about military activity in segregated areas, especially on tactical level. Update of coordination procedures and local ASM support tool/system which will reduce time required to release segregated areas back to civil traffic.
- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures taking into account forecasted demand of civil traffic on segregated airspace allocation in time on day of the operations.
Annual review of the efficiency of airspace utilization is conducted.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Poland	60%				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Warsaw	60%				

Initiatives implemented or planned to improve PI#7

The available flight planning options are constantly updated to allow Aircraft Operator (AO) to plan the most horizontally effective trajectory, even when the areas are active. Except ATS network and DCTs, the AOs have the possibility to plan in Free Route Airspace environment (POLFRA). Implementation of cross-border free route airspace operations within Lithuanian and Polish airspace (BALTIC FRA) and the cross border operations between BALTIC FRA and South East Europe FRA are planned for 1Q 2022 which will further increase the planning opportunities.

The lateral and vertical limits of the airspace elements published are designated considering the actual needs of users and nature of activities. All airspace elements shall be planned only for the time period necessary to perform the intended task. The user is obliged to specify precisely the period of activity of a selected element and all timely suspensions of activity between these periods.

Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.
Special procedures are prepared including dynamic change of level or segment and creation of new temporary routings for avoidance of military traffic
.
Further measures planned to be implemented include:
- improvement/automation of exchange of information about military activity in segregated areas, especially on tactical level. Update of coordination procedures and local ASM support tool/system which will reduce time required to release segregated areas back to civil traffic.
- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures taking into account forecasted demand of civil traffic on segregated airspace allocation in time on day of the operations.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Poland	83%				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Warsaw	83%				

Initiatives implemented or planned to improve PI#8

The lateral and vertical limits of the airspace elements published are designated considering the actual needs of users and nature of activities. All airspace elements shall be planned only for the period necessary to perform the intended task. The user is obliged to specify precisely the period of activity of a selected element and all timely suspensions of activity between these periods.

Segmentation, time and level restrictions are imposed when needed to mitigate the impact in location in heavy traffic periods of day. If possible class C TRA airspace is implemented to minimize the impact on civil routing.
Special procedures are prepared including dynamic change of level or area segment.

Further improvements planned to be implemented include:
- improvement/automation of exchange of information about military activity in segregated areas, especially on tactical level. Update of coordination procedures and local ASM support tool/system which will reduce time required to release segregated areas back to civil traffic.
- implementation of closer cooperation between AMC Poland and FMP Warszawa in order to reduce as much as possible negative influence of segregated areas on civil traffic. Implementation of new coordination procedures taking into account forecasted demand of civil traffic on segregated airspace allocation in time on day of the operations.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.30					
Actual performance	0.00					

NSA's assessment of capacity performance

Over 2020 delays in the Polish airspace were minimal (1 404 minutes in total) and were recorded in large majority in Q1 2020 (Jan-Feb, before the pandemic, when the traffic was higher compared to the same period in 2019: Jan +5,5%, Feb +7,2% according to PRU data). They were attributed to ATC Capacity. Since mid-March 2020, following the traffic drop, en-route delays were noted only on a single day in July and were related to approach to Kraków airport (demand exceeding the declared capacity).

The extraordinary traffic reduction related to COVID-19 pandemic and actions undertaken by PANSA to mitigate risks related to possible infection spread among employees as well as flexible roster planning responding to expected traffic evolution under the rolling NOP planning allowed for achieving the value of delays close to 0 minutes per flight.

Monitoring process for capacity performance

The process of continuous monitoring of ANSPs was conducted based on the Regulation (EU) 2019/317) and Regulation 2017/373. The monitoring process in 2020 was conducted based on the information received from ANSPs. Including ANSP's business and annual plans and their consistency with the PP.

Despite the fact that the monitoring process was affected by COVID-19 pandemic, the monitoring activities of KPA CAPACITY were conducted systematically and were covering, among the others, the following areas:
- implementation of major projects aimed at increasing capacity and enhancing flight efficiency,
- execution of employment plan, especially operational personnel,
- execution of training plan,
- ATCO productivity.

The scope of the selected areas was chosen taking into account airspace users' remarks, as well as CAA own assessment. All the above supervision exercise was providing the CAA the knowledge on the ANSPs Performance.
The monitoring of progress in achieving performance targets set in Performance Plan for RP3 was performed also by dedicated Polish NSA inspectors during routine inspections .

Important part of the monitoring was preparation of data for the Interim Monitoring Report executed in accordance with the Commission Implementing Regulation (EU) 2020/1627 of 3 November 2020 on exceptional measures for the third reference period (2020-2024) of the single European sky performance and charging scheme due to the COVID-19 pandemic.

Capacity Planning

Due to COVID-19 pandemic and related traffic drop, year 2020 was exceptional - also in terms of capacity planning. Capacity planning focused on mid and long-term planning based on Statfor forecasts, NM data, PANSA simulations and internal recovery plan prepared by PANSA as well as short term planning (up to 4-6 weeks) under the NOP rolling planning initiative coordinated by the Network Manager. Rostering at PANSA also had to consider implementation of measures aimed at limiting the risk of virus spread among ATCOs.

Despite the traffic drop and along with the above mentioned flexible rolling short-term capacity planning, PANSA continued to implement initiatives aimed at improving capacity in Warsaw FIR to meet challenges related to traffic increase after the crisis as well as potential changes in traffic flows.

These included the following:
- continuation of new ATCOs training (continued training process for trainees employed before the pandemic breakout, while plans for additional recruitments to start 2020+ were suspended/revised, considering lower traffic levels expected by end of RP3 as well as difficulties related to training caused by low levels of traffic and COVID restrictions),
- continued adaptation of the air traffic management system (Pegasus_21) to operational needs and modernisation of the ATM system,
- development of tools supporting ATCOs and flow management optimisation (including Traffic Complexity Tool and update of CAT system),
- continued investments in infrastructure (CNS) and technology allowing for optimisation of airspace structures and optimisation of coverage in the Polish airspace as well as supporting contingency (although due to COVID pandemic and related liquidity issues investment plan had to be reviewed - see the chapter on Investments),
- finalisation of A-CDM implementation at EPWA airport as well as continued improvement of AMAN in Warsaw TMA.

Plans for the following years of RP3 include, among others:
- reorganisation of TMA Warszawa in 2021 – new sectors, new SID/STAR procedures,
- reorganisation of ACC Warszawa sector configuration - three layer vertical division - to be implemented under staged approach with the start in 2022/2023 (implementation postponed as compared to earlier plans due to traffic reduction following COVID-19 pandemic),
- reorganisation of TMA Kraków in 2022 – new sectors, new SID/STAR procedures,
- continuation of training process for new ATCOs (required increase in ATCO numbers as a result of planned airspace changes),
- refreshment training for current ATCOs to maintain their competence following the 2020-2021 significant traffic drop,
- continued investments in infrastructure (CNS) and technology allowing for optimisation of airspace structures and optimisation of coverage in the Polish airspace as well as supporting resilience, scalability and flexibility of service provision,
- continuation of flexible rostering,
- evolving ACC sector configurations and management to cope with updated traffic forecasts,
- continued FMP dynamic management,
- improvement of comprehensive airspace management.

ATCO in OPS (FTE)

Warsaw ACC	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Observations**
Planned (Perf Plan)	166.25	185.25					Data presented in table above include SUP ATM. COVID-19 pandemic and related traffic drop resulted in delay in the planned increase of ATCO as compared to initial 2019 draft RP3 PP (low traffic levels led to prolonged OJT training process). Moreover, over 2020 3 ATCOs were moved to other duties (due to internal needs) and are now disclosed under PRU category 2 (ATCOs on other duties), although they continue to support OPS working part-time on duty (not included in the FTEs numbers in the table above).
Actual	174.8	172.0					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Poland experienced a traffic reduction of 59% from 2019 levels, to 377k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users, 83% of which occurred in January and February before the traffic declined.

En route Capacity Incentive Scheme

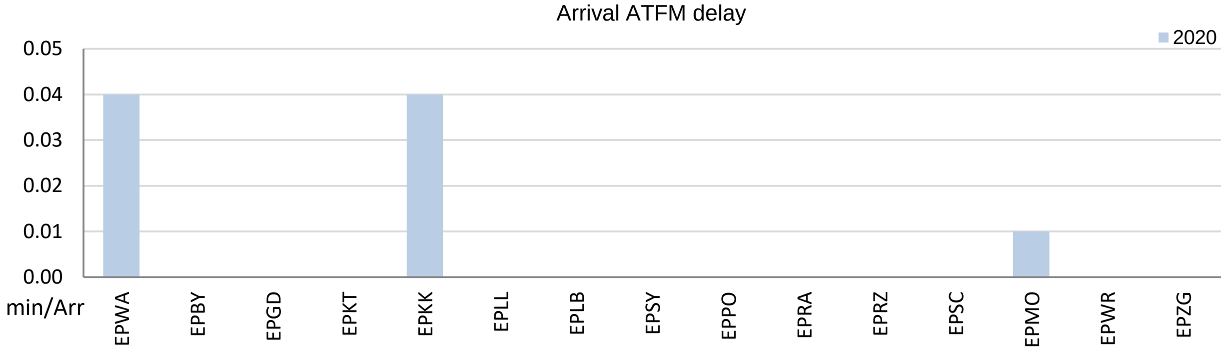
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional National Target	0.30					
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

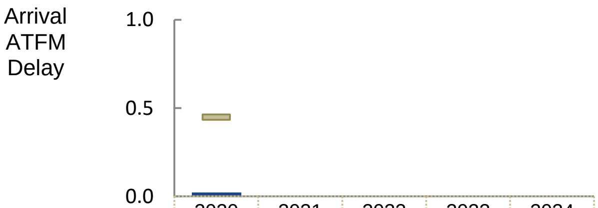
For Poland the scope of the RP3 monitoring comprises a total of 15 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only the main airport Warsaw (EPWA) must be monitored for the pre-departure delay indicators.
The Airport Operator Data Flow, necessary for the monitoring of the pre-departure delays, is correctly established where required and the monitoring of these indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at the ensemble of these 15 airports decreased in 2020 by 56%. At Warsaw this reduction was 59%.
Arrival ATFM delays decreased by 80% with respect to 2019 following the reduction in traffic and slot adherence at national level was 95.3%.

2. Arrival ATFM Delay



The national average arrival ATFM delay at Polish airports in 2020 was 0.02 min/arr, significantly lower than the 0.39 min/arr in 2019 (-95%).
At airport level, only Warsaw-Chopin, Krakow and Warsaw-Modlin registered delays, all in the first trimester of the year.
At Warsaw-Chopin (EPWA; 2019: 0.86 min/arr; 2020: 0.04 min/arr), delays in this first trimester were not high compared with those observed in 2019. 43% of the delays were attributed to ATC capacity issues, 41% to weather, 12% to aerodrome capacity and 3% to ATC staffing.
At Krakow (EPKK; 2019: 0.03 min/arr; 2020: 0.04 min/arr) 48% of the delays were attributed to weather, 27% to ATC capacity issues and 25% to ATC staffing.

3. Arrival ATFM Delay – National Target and Incentive Scheme

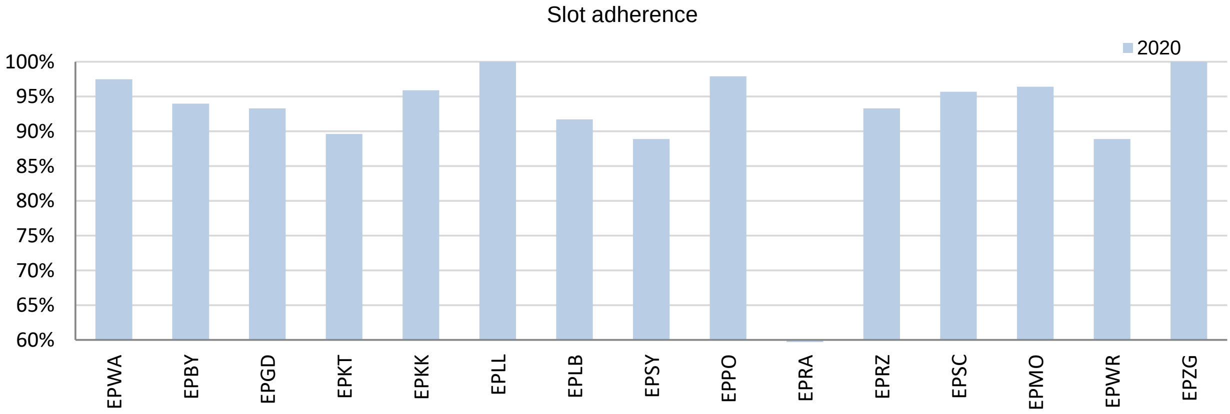


	2020	2021	2022	2023	2024
Actual	0.02				
Target	0.45				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Polish airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
All 15 Polish airports showed adherence at or above 85% and 7 of them (including Warsaw) above 95%. The national average was 95.3%. With regard to the 4.7% of flights that did not adhere, 3.4% was early and 1.3% was late.
The Polish monitoring report adds that *the following measures were/will be implemented at Warsaw (EPWA):*
- implemented: A-CDM (2020)
- planned: Traffic Complexity Tool (2021), A-SMGCS (2024)

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Warsaw (the only Polish airport subject to monitoring of this indicator).
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Warsaw was above 40% every month since April 2020 (preventing the calculation of this indicator) due to the special traffic composition during the months of the pandemic. Warsaw had proper reporting before April 2020.

6. All Causes Pre-departure Delay

Warsaw is the only Polish airport subject to the monitoring of this indicator.
The total (all causes) delay in the actual off block time at Warsaw in 2020 was 9.32 min/dep. The higher delays per flight were observed in the first half of the year.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

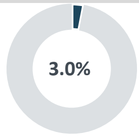
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Warszawa - Chopina-EPWA	0.04					97.5%					n/a					9.32				
Bydgoszcz-EPBY	0					94.0%					-					-				
Gdansk-EPGD	0					93.3%					-					-				
Katowice - Pyrzowice-EPKT	0					89.6%					-					-				
Krakow - Balice-EPKK	0.04					95.9%					-					-				
Lodz - Lublinek-EPLL	0					100.0%					-					-				
Lublin-EPLB	0					91.7%					-					-				
Olsztyn-Mazury-EPSY	0					88.9%					-					-				
Poznan - Lawica-EPPO	0					97.9%					-					-				
Radom-EPRA	0					n/a					-					-				
Rzeszow - Jasionka-EPRZ	0					93.3%					-					-				
Szczecin - Goleniów-EPSC	0					95.7%					-					-				
Warszawa - Modlin-EPMO	0.01					96.4%					-					-				
Wroclaw - Strachowice-EPWR	0					88.9%					-					-				
Zielona Gora - Babimost-EPZG	0					100.0%					-					-				

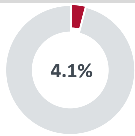
Contextual economic information: en-route air navigation services

FAB:	Baltic FAB
Main ATSP:	PANSA
National currency:	PLN
Exchange rate:	1 EUR = 4.25483 PLN

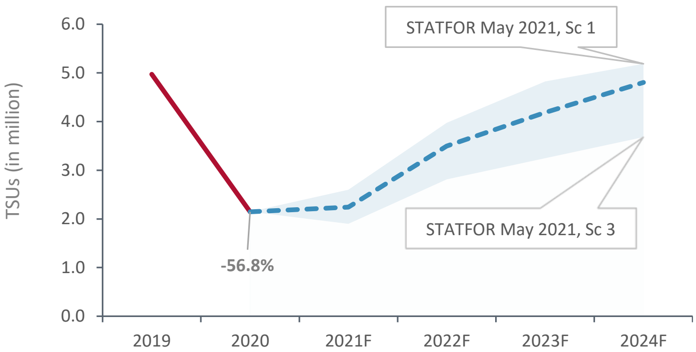
▪ Poland ECZ share in European ANS actual costs in 2020

▪ Poland ECZ share in European ANS actual TSUs in 2020

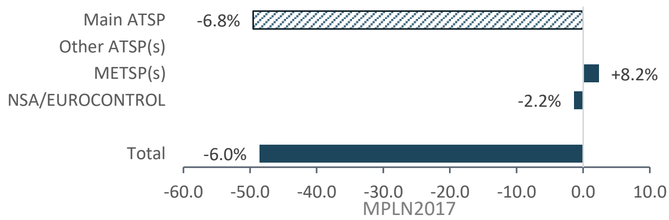




Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal PLN)	829 558 254	836 485 578	805 392 508	-2.9%	-3.7%
Inflation %	3.3%	2.1%	3.7%	0.4 p.p.	1.6 p.p.
Real en-route costs (PLN2017)	791 499 303	814 956 767	766 383 853	-3.2%	-6.0%
Total en-route Service Units (TSUs)	2 238 769	4 971 806	2 145 811	-4.2%	-56.8%
Real en-route unit cost per Service Unit (PLN2017)	**353.54**	**163.92**	**357.15**	**+1.0%**	**+117.9%**
Real en-route unit cost per Service Unit (EUR2017)	**83.09**	**38.52**	**83.94**	**+1.0%**	**+117.9%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were slightly higher (+1.0%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of lower (-4.2%) actual TSUs and lower (-3.2%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-56.8%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Poland ECZ rose substantially (+117.9% in real terms) mainly due to the exceptional -56.8% traffic reduction. In the meantime, en-route costs decreased (-6.0%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: PANSA - the main ATSP (-6.8%), the MET service providers (+8.2%) and the NSA/EUROCONTROL (-2.2%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of PANSA en-route ANS costs (real PLN2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	442 541 742	513 270 950	442 446 608	-0.0%	-13.8%
Other operating costs	94 824 785	111 102 592	77 112 516	-18.7%	-30.6%
Depreciation	97 588 676	89 718 704	98 585 270	+1.0%	+9.9%
Cost of capital	62 984 009	15 602 571	60 693 693	-3.6%	+289.0%
Exceptional costs	0	0	0		
VFR exempted flights	-3 518 836	-4 531 394	-3 211 036	-8.7%	-29.1%
Total PANSA en-route costs	**694 420 376**	**725 163 423**	**675 627 051**	**-2.7%**	**-6.8%**

Analysis at main ATSP level

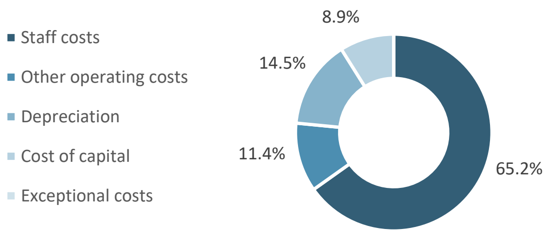
In 2020, PANSA actual en-route costs were lower (-2.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, PANSA actual 2020 en-route costs are lower (-6.8%, or -49.5 MPLN2017) compared to those reported in 2019. This results from the combination of:

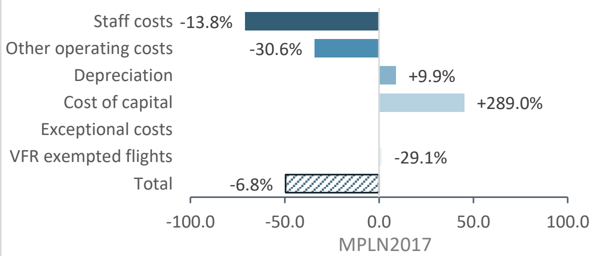
- significantly lower staff costs (-13.8%, or -70.8 MPLN2017);
- significantly lower other operating costs (-30.6%, or -34.0 MPLN2017);
- higher depreciation costs (+9.9%, or +8.9 MPLN2017);
- significantly higher cost of capital (+289.0%, or +45.1 MPLN2017);
- significantly lower deduction for VFR exempted flights (-29.1%).

PANSA implemented cost containment measures that affected recruitment, payment of contributions to the occupational pension scheme and group insurance, reduction of weekend and night work hours, overtime, bonuses and rewards. Extraordinary measures also affected travel and training expenses, energy and material consumption, repair services, costs of external services and the level of taxes and charges.

PANSA actual 2020 en-route costs by nature

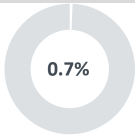


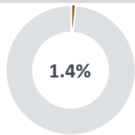
Actual costs variation by nature between 2019 and 2020



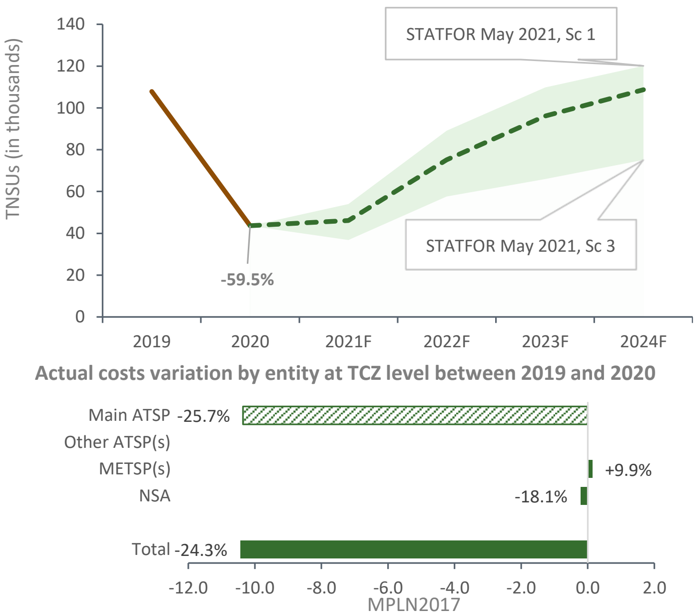
Contextual economic information: terminal air navigation services

Main ATSP:	PANSA
National currency:	PLN
Number of airports in TCZ:	1





Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal PLN)	44 126 045	34 344 320	-22.2%
Inflation %	2.1%	3.7%	1.6 p.p.
Real terminal costs (PLN2017)	42 896 651	32 457 081	-24.3%
Total Terminal Navigation Service Units	107 857	43 637	-59.5%
Real terminal unit cost per Terminal Navigation Service Unit (PLN2017)	**397.72**	**743.79**	**+87.0%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**93.47**	**174.81**	**+87.0%**



Analysis at terminal charging zone level

Poland TCZ 1 comprises only Chopina W Warszawie airport.

Between 2019 and 2020, the terminal unit costs of Poland TCZ 1 rose substantially (+87.0% in real terms) mainly due to the exceptional -59.5% traffic reduction. In the meantime, terminal costs significantly reduced (-24.3%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-59.5%) is expected to be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: PANSA - the main ATSP (-25.7%), the MET service provider (+9.9%) and the NSA (-18.1%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

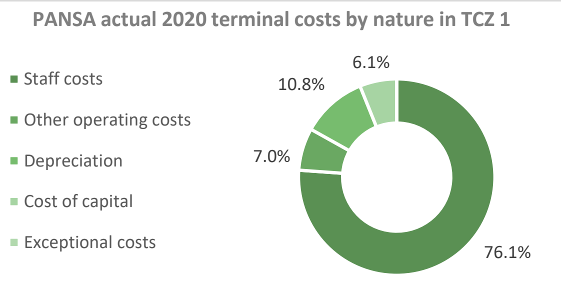
Breakdown of PANSA Terminal ANS costs in TCZ 1 (real PLN2017)	2019A	2020A	2020A vs 2019A
Staff	30 870 547	22 749 151	-26.3%
Other operating costs	4 673 067	2 082 328	-55.4%
Depreciation	3 328 867	3 227 643	-3.0%
Cost of capital	1 366 578	1 821 852	+33.3%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total PANSA terminal costs in TCZ 1	**40 239 059**	**29 880 974**	**-25.7%**

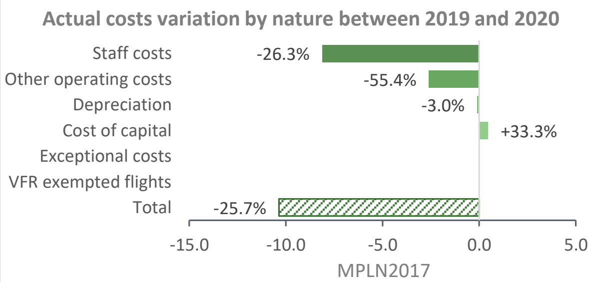
Analysis at main ATSP level

As indicated in the text box above, PANSA actual 2020 terminal costs in TCZ 1 are significantly lower (-25.7%, or -10.4 MPLN2017) than those reported in 2019. This results from the combination of:

- significantly lower staff costs (-26.3%, or -8.1 MPLN2017);
- significantly lower other operating costs (-55.4%, or -2.6 MPLN2017);
- lower depreciation costs (-3.0%, or -0.1 MPLN2017);
- significantly higher cost of capital (+33.3%, or +0.5 MPLN2017).

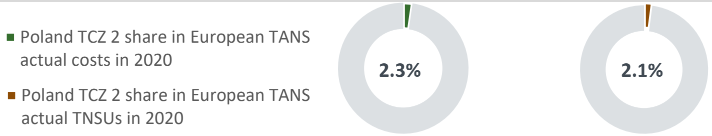
PANSA implemented cost containment measures that affected recruitment, payment of contributions to the occupational pension scheme and group insurance, reduction of weekend and night work hours, overtime, bonuses and rewards. Extraordinary measures also affected travel and training expenses, energy and material consumption, repair services, costs of external services and the level of taxes and charges.



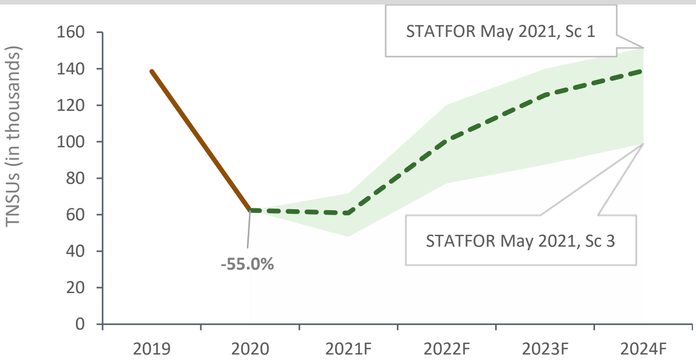


Contextual economic information: terminal air navigation services

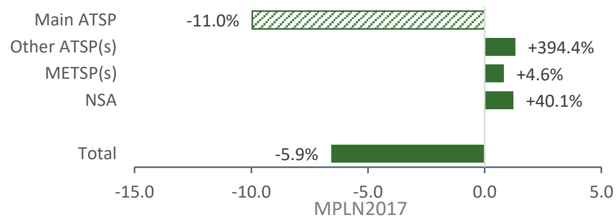
Main ATSP:	PANSA
National currency:	PLN
Number of airports in TCZ:	14



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal PLN)	114 834 656	110 932 731	-3.4%
Inflation %	2.1%	3.7%	1.6 p.p.
Real terminal costs (PLN2017)	111 822 410	105 246 034	-5.9%
Total Terminal Navigation Service Units	138 516	62 352	-55.0%
Real terminal unit cost per Terminal Navigation Service Unit (PLN2017)	**807.29**	**1 687.94**	**+109.1%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**189.73**	**396.71**	**+109.1%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Poland TCZ 2 comprises 14 airports.

Between 2019 and 2020, the terminal unit costs of Poland TCZ 2 rose substantially (+109.1% in real terms) mainly due to the exceptional -55.0% traffic reduction. In the meantime, terminal costs decreased (-5.9%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-55.0%) is expected to be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: PANSA - the main ATSP (-11.0%), the other ATSPs operating in the TCZ (+394.4%), the MET service providers (+4.6%) and the NSA (+40.1%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of PANSA Terminal ANS costs in TCZ 2 (real PLN2017)	2019A	2020A	2020A vs 2019A
Staff	59 295 141	52 949 796	-10.7%
Other operating costs	14 377 836	8 398 931	-41.6%
Depreciation	11 971 704	12 324 194	+2.9%
Cost of capital	4 959 600	6 976 594	+40.7%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total PANSA terminal costs in TCZ 2	**90 604 280**	**80 649 516**	**-11.0%**

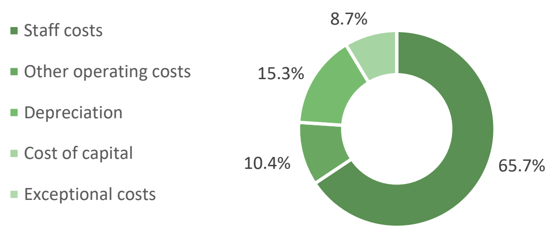
Analysis at main ATSP level

As indicated in the text box above, PANSA actual 2020 terminal costs in TCZ 2 are significantly lower (-11.0%, or -10.0 MPLN2017) than reported in 2019. This results from the combination of:

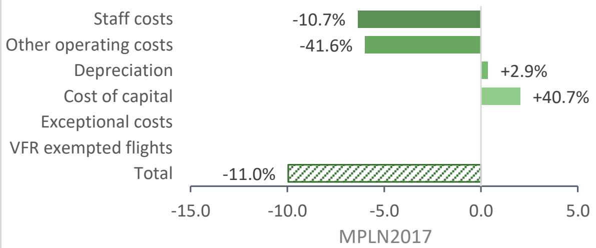
- significantly lower staff costs (-10.7%, or -6.3 MPLN2017);
- significantly lower other operating costs (-41.6%, or -6.0 MPLN2017);
- higher depreciation costs (+2.9%, or +0.4 MPLN2017);
- significantly higher cost of capital (+40.7%, or +2.0 MPLN2017).

PANSA implemented cost containment measures that affected recruitment, payment of contributions to the occupational pension scheme and group insurance, reduction of weekend and night work hours, overtime, bonuses and rewards. Extraordinary measures also affected travel and training expenses, energy and material consumption, repair services, costs of external services and the level of taxes and charges.

PANSA actual 2020 terminal costs by nature in TCZ 2



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (PLN2017)	814 956 767	766 383 853	-6.0%
Real terminal costs (PLN2017)	154 719 060	137 703 115	-11.0%
Real gate-to-gate costs (PLN2017)	969 675 827	904 086 968	-6.8%
En-route share in gate-to-gate costs (%)	**84.0%**	**84.8%**	**+0.7 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Poland decreased (-6.8%, or -65.6 MPLN2017) in real terms. This is a combination of a reduction (-6.0%, or -48.6 MPLN2017) in en-route and a decrease (-11.0%, or -17.0 MPLN2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (84.8%) slightly rose (+0.7 p.p.) compared to the figure reported in 2019 (84.0%).

Breakdown of PANSA gate-to-gate ANS costs (real PLN2017)	2019A	2020A	2020A vs 2019A
Staff	603 436 638	518 145 555	-14.1%
Other operating costs	130 153 495	87 593 774	-32.7%
Depreciation	105 019 275	114 137 108	+8.7%
Cost of capital	21 928 748	69 492 139	+216.9%
Exceptional costs	0	0	
VFR exempted flights	-4 531 394	-3 211 036	-29.1%
Total PANSA gate-to-gate costs	**856 006 763**	**786 157 541**	**-8.2%**

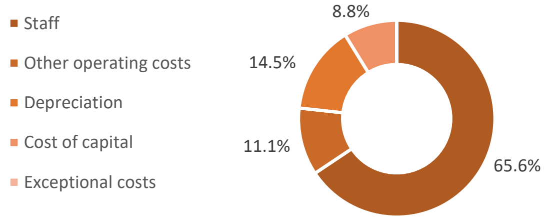
Analysis at main ATSP level

PANSA actual 2020 gate-to-gate costs are lower (-8.2%, or -69.8 MPLN2017) than those reported in 2019. This results from the combination of:

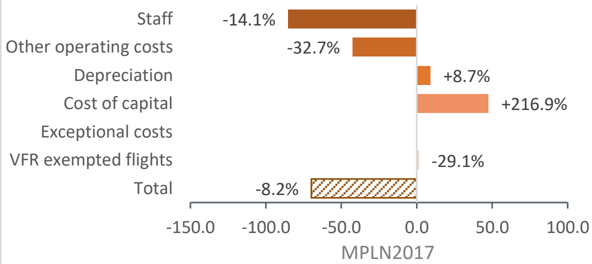
- lower staff costs (-14.1%, or -85.3 MPLN2017);
- significantly lower other operating costs (-32.7%, or -42.6 MPLN2017);
- higher depreciation costs (+8.7%, or +9.1 MPLN2017);
- significantly higher cost of capital (+216.9%, or +47.6 MPLN2017);
- significantly lower deduction for VFR exempted flights (-29.1%).

Details on the drivers behind the changes observed above are provided in the respective analyses of PANSA at en-route and terminal charging zone level.

PANSA actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Poland

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Annual Monitoring Report 2020
Local level view
Portugal

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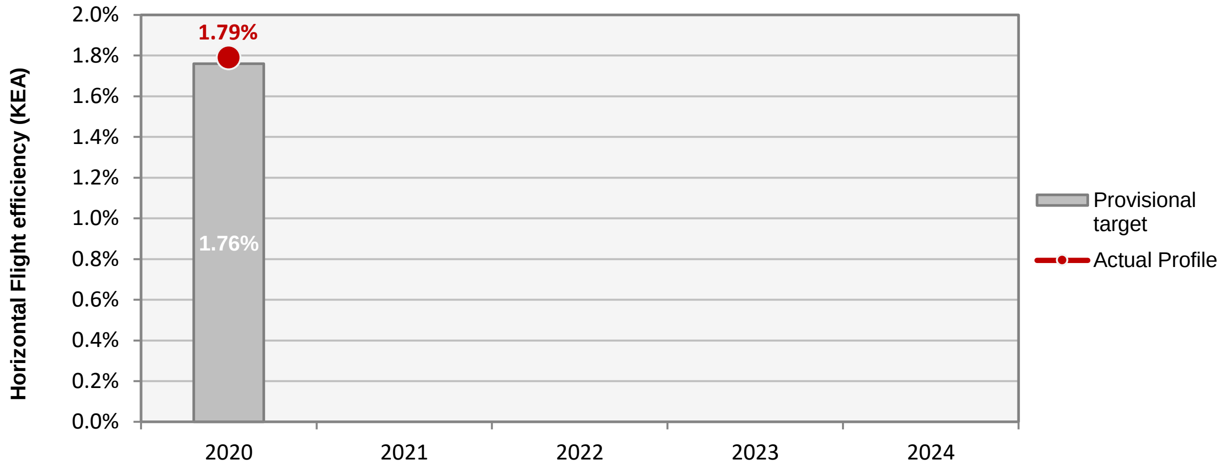
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
NAV Portugal	98	C	D	D	D	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

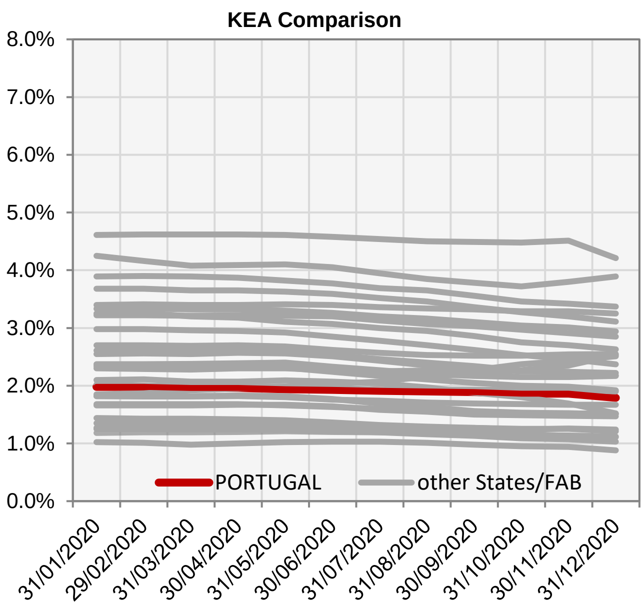
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

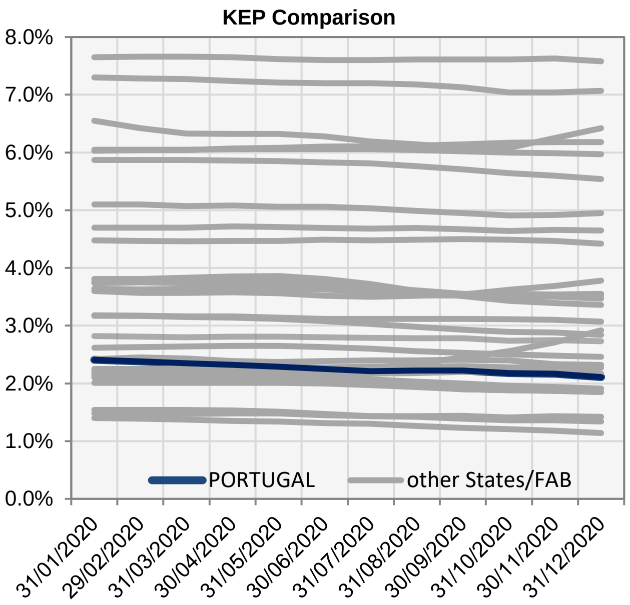
KEA	2020	2021	2022	2023	2024
Provisional target	1.76%				
Actual performance	1.79%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.98%	1.98%	1.96%	1.96%	1.94%	1.93%	1.91%	1.90%	1.89%	1.86%	1.86%	1.79%
KEP	2.41%	2.38%	2.35%	2.32%	2.29%	2.25%	2.21%	2.22%	2.22%	2.18%	2.17%	2.11%
KES	2.19%	2.16%	2.12%	2.10%	2.06%	2.01%	1.97%	1.97%	1.96%	1.91%	1.90%	1.85%



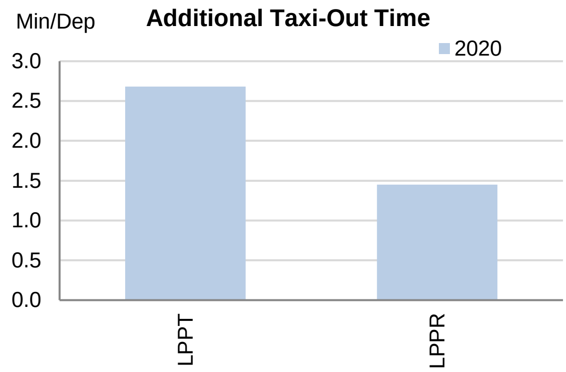


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

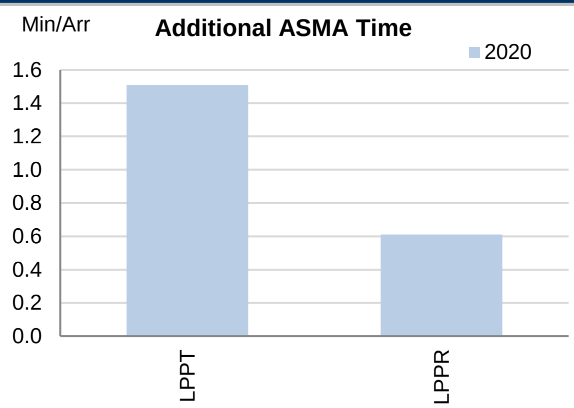
The scope of RP3 monitoring for Portugal comprises 10 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Lisbon (LPPT) and Porto (LPPR)) must be monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established where required and the monitoring of all environment indicators can be performed.
Traffic at these 10 airports, that had increased considerably during RP2, decreased in 2020 by 56% with respect to 2019.
Both additional times at Lisbon and Porto considerably improved as of the month of April, when traffic plummeted, resulting in annual additional taxi-out times around 33% shorter and additional ASMA times around 50% than in 2019.
The shares of CDO flights are relatively high in 2020.
According to the Portuguese monitoring report, no initiatives to improve the environmental indicators were planned at this stage due to the significant reduction of traffic which does not allow a perfect diagnosis of the situation and the type of measures to be applied.

2. Additional Taxi-Out Time



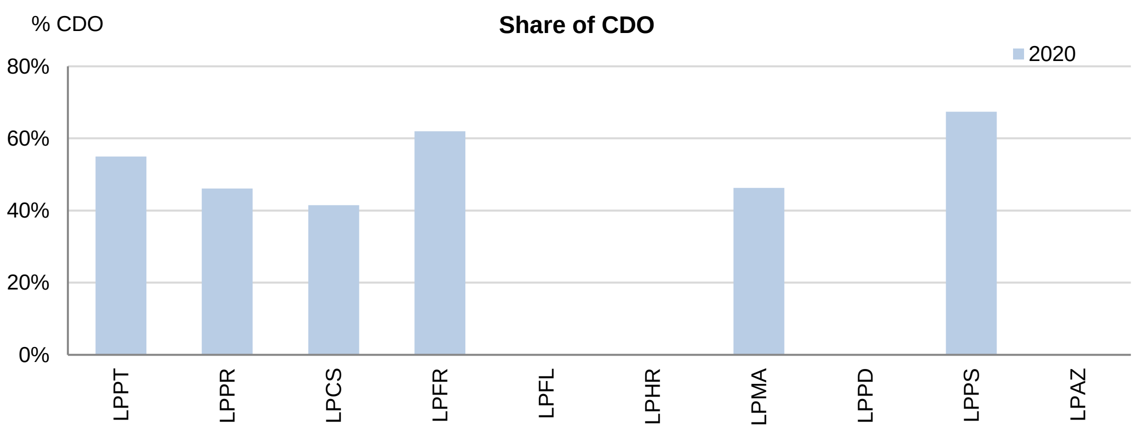
Additional taxi-out times at Lisbon (LPPT; 2019: 3.96 min/dep.; 2020: 2.68 min/dep.) decreased drastically as of the month of April alongside the traffic. Between April and December these times averaged 1.35 min/dep.
Similarly, at Porto the reduction in traffic impacted this indicator, that from April to December averaged 1.14 min/dep.

3. Additional ASMA Time



Like the additional taxi-out times, the additional times in the terminal airspace drastically decreased in 2020.
At Lisbon (LPPT; 2019: 2.75 min/arr.; 2020: 1.51 min/arr.) the additional ASMA times were practically zero between April and June, then increased slightly averaging 0.6 min/arr. the second half of the year.
At Porto (LPPR; 2019: 1.34 min/arr.; 2020: 0.61 min/arr.) the additional ASMA times averaged only 0.17 min/arr. between April and December.

4. Share of arrivals applying CDO



All airports have shares of CDO flights (well) above the overall RP3 value in 2020 (32.5%), ranging from 41.5% (Cascais - LPCS) to 67.4% (Porto Santo - LPPS).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Lisbon-LPPT	2.68					1.51					55%				
Porto-LPPR	1.45					0.61					46%				
Cascais-LPCS	-					-					41%				
Faro-LPFR	-					-					62%				
Flores-LPFL	-					-					n/a				
Horta-LPHR	-					-					n/a				
Madeira-LPMA	-					-					46%				
Ponta Delgada-LPPD	-					-					n/a				
Porto Santo-LPPS	-					-					67%				
Santa Maria-LPAZ	-					-					n/a				

Update on Military dimension of the plan

Environment: Airspace design is established in accordance with the FUA principles for strategic, pre-tactical and tactical levels.
The military training missions are conducted primarily within the restricted airspace associated with military aerodromes or, when necessary, at the temporary segregated airspace established at strategic level. This type of airspace usage results in direct and short transit routes to and from the established training areas. The average transit route extension between the military aerodromes and the training areas in Portugal is around 20NM.
Additionally, the average duration of the training missions, (not including the transit times) is one (1) hour, except during major exercises.
The number of major air exercises in Portugal in 2020 was reduced due to the COVID19 pandemic, and those that took place were downscaled, in both the number of missions and flight hours.
A close and active daily coordination between the military and the civil ANSP is, since long, the trademark of the Portuguese ASM. Also, the FUA coordination is supported by the Local and regional Airspace Management Tool (LARA), which enables the required level of civil military interoperability for the ASM process.
As a general assessment, the environmental impact of the military during the RP3 period is expected to be low, since the military training activity was reduced due to the pandemic, and the current airspace structure promotes the optimization of transit times between air bases and training areas, thus reducing the associated carbon footprint.

Capacity: As mentioned for the environment KPA, during the RP3 period the military air activity in Portugal was reduced due to the COVID 19 pandemic.
This, in conjunction with the general reduction of the commercial aviation activity, also associated with the COVID19 pandemic, has resulted in a very low impact of the military in the capacity KPA, particularly since 2019.
The military training activities in Portugal are conducted in accordance with the FUA principle, as mentioned in the environment KPA.
ASM is the main enabler to minimize the military impact on the capacity KPA, which is supported by the LARA tool, and is achieved through a close civil military cooperation at all the three FUA levels.
On a daily basis, the FUA level 2 and 3 is managed by the ASM cell which is jointly manned by civil and military personnel, co-located within the Lisbon ACC. This provides for a close liaison at both pre-tactical and tactical level.
Overall, the reduction of the military training activity, including exercises, should result in a low impact in capacity. Moreover, the activation of airspace under the FUA principle should not be included in any type of capacity reduction, since, in the current operational arrangements between the Portuguese civil ANSP and the military, the required blocks of airspace are only active between the actual time the military aircraft enter the area until the moment they vacate it, thus increasing capacity.
The current trend by some ANSP to include the use of FUA by the military as a “capacity reduction factor”, is not only contrary to the principles contained in Regulation 2150/2005, it is also detrimental to the effort put by the military in the mission planning phase when establishing the airspace daily requirements.

Military - related measures implemented or planned to improve capacity

Environment: The military are updating the CNS equipment to be able to fly on more efficient routes, especially when operating as General Air Traffic. In this sense, several fleets are being modified to comply with the latest CNS requirements and new aircraft are scheduled for delivery soon.
Regarding airspace design, Portugal is currently undergoing a major restructuring of its airspace structures in order to improve its overall capacity and adequacy to both military and civil requirements.

Capacity: As already mentioned in the environment KPA, a major airspace restructuring is currently ongoing in Portugal, involving all the main stakeholders, in order to accommodate for both the military and civil requirements.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Portugal	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Lisbon	N/A				

Initiatives implemented or planned to improve PI#6

No data available. LARA tool with the direct interface with the NM is only available from 2021 onwards.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Portugal	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Lisbon	N/A				

Initiatives implemented or planned to improve PI#7

There are no CDRs at Lisboa FIR

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Portugal	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Lisbon	N/A				

Initiatives implemented or planned to improve PI#8

Minutes of ATFM en-route delay

	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.23					
Actual performance	0.25					

NSA's assessment of capacity performance

ATFM en route delay was impacted by two events in 2020. The transition to the provisional ops room, due to works in the main room, and in March the implementation of segregation measures due to COVID19, with the consequent reduction of available capacity during this period. Although for the remainder of the year, en-route delays were at zero, the significant traffic reduction did not allow the total delays to be diluted in accordance with the target set

Monitoring process for capacity performance

NAV Portugal and ANAC have a quarterly monitoring process of the Performance Indicators.

Capacity Planning

Due to COVID 19, priority was given to the deployment and training of the new ATM system to be operational during Q1 of 2022, since at this stage there are no capacity constrains foreseen at En route level.

ATCO in OPS (FTE)

	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	146	162					
Actual	145.7	148.2					

Application of Corrective Measures for Capacity (if applicable)

On what concerns Capacity and en-route delay, the actual value was 0,25 min/flight and the objective was 0,23 min/flight (+0,02) caused by a transition to the operation room and due to staff segregation measures caused by COVID 19. The last 9 months of 2020 had almost zero minutes of delay, However as the levels of traffic were very low, it was not possible to dilute the performance of the first quarter.

Considering the reasons for the non-compliance no recommendations were made.

Summary of capacity performance

The Lisbon FIR experienced a traffic reduction of 59% from 2019 levels, to 267k flights. The traffic level was accommodated with 67k minutes of en route ATFM delays to airspace users. Practically all delays occurred between January and March: 45% of delays were attributed to "Other" or "Special Event" and another 40% were attributed to ATC capacity.

En route Capacity Incentive Scheme

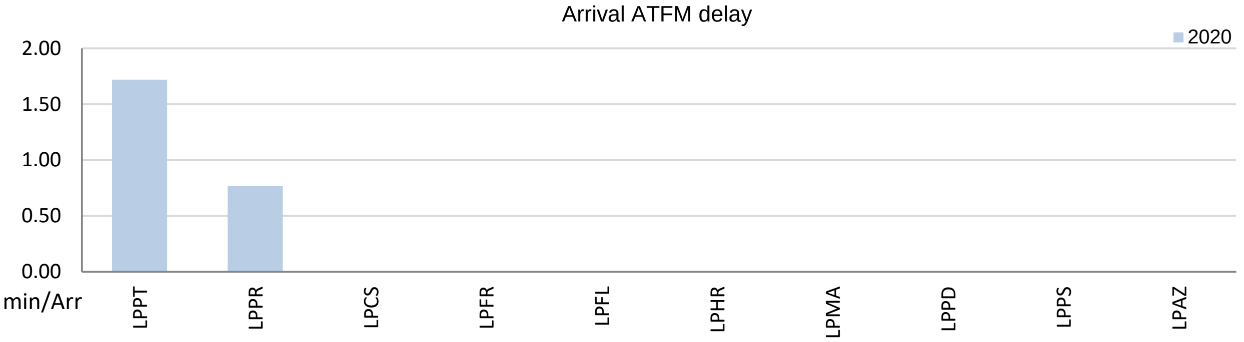
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.22					Only C, R, S, T, M P causes are considered for the incentive scheme. No breakdown of CRSTMP values were provided in the monitoring report.
Deadband +/-						
Actual						

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

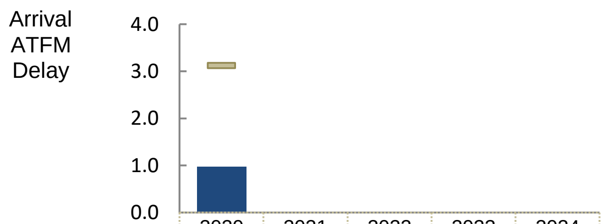
The scope of RP3 monitoring for Portugal comprises 10 airports in 2020, However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Lisbon (LPPT) and Porto (LPPR)) must be monitored for pre-departure delays.
The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly established where required and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting from Porto does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at these 10 airports, that had increased considerably during RP2, decreased in 2020 by 56% with respect to 2019. In line with this drop in traffic, arrival ATFM delays decreased by 65% with respect to 2019 and were observed only at the two main airports Lisbon and Porto. Slot adherence at national level was 95.3%.

2. Arrival ATFM Delay



The national average arrival ATFM delay at Portuguese airports in 2020 was 0.97 min/arr, significantly lower than the 2.76 min/arr in 2019 (-65%)
At airport level, only Lisbon and Porto registered delays. Most delays took place in the first trimester of the year, but despite the drastic reduction in traffic, ATFM delays were also present during the rest of the year.
Lisbon (LPPT; 2019: 4.13 min/arr; 2020: 1.72 min/arr) showed the second highest ATFM delays in the SES area. 49% of these delays were attributed to weather, 26% to airspace management issues and 18% to aerodrome capacity.
At Porto (LPPR; 2019: 3.09 min/arr; 2020: 0.77 min/arr) delays were attributed to weather (89%), aerodrome capacity (10%) and ATC staffing (1%)

3. Arrival ATFM Delay – National Target and Incentive Scheme

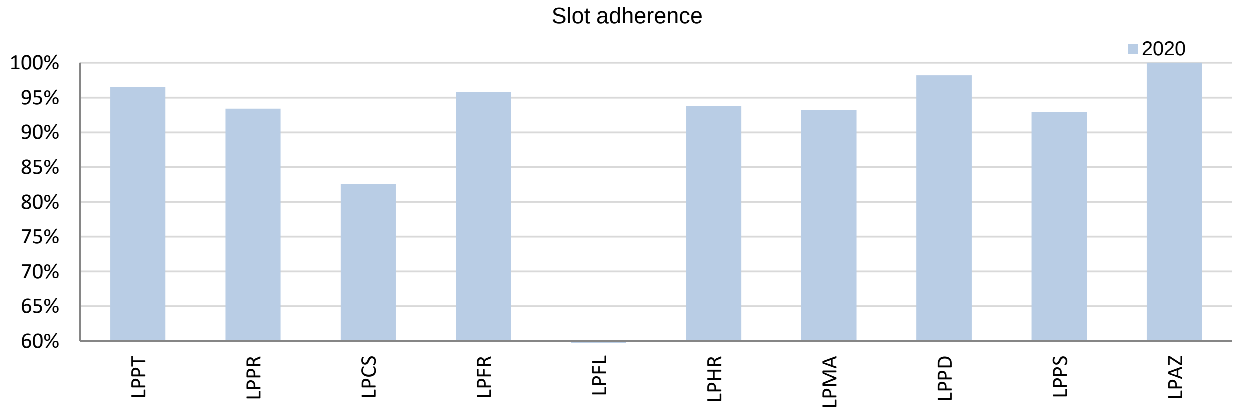


	2020	2021	2022	2023	2024
Actual	0.97				
Target	3.12				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Portuguese airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
Most Portuguese airports showed adherence above 90% with the exception of Cascais (LPCS) that ranged just above the required compliance threshold of 80%. Nevertheless this lower adherence corresponds to only 8 departures outside of the STW in 2020.
The national average was 95.3%. With regard to the 4.7% of flights that did not adhere, 3.5% was early and 1.2% was late.

5. ATC Pre-departure Delay

The performance at Lisbon, the only Portuguese airport where this indicator can be calculated has notably improved with respect to the previous year (LPPT; 2019: 4.16 min/dep.; 2020: 2.13 min/dep.) but this delay is still the highest in the SES area.
The quality of the airport data reported by Porto was too low, preventing the calculation of this indicator for this airport.

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at both Porto and Lisbon.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)
To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Porto was above 40% for 5 months in 2020, preventing the annual calculation of this indicator. Porto usually has proper reporting.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at the two Portuguese airports monitored for this indicator in 2020 was 12.02 min/dep for Lisbon (LPPT) and 9.15 min/dep. for Porto (LPPR).
High delays per flight at both airports were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances. At Lisbon the highest delays in the year took place in January, averaging more than 20 min/dep.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

7. Appendix

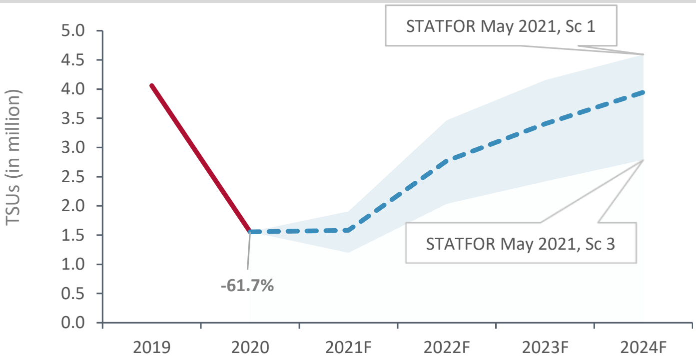
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Lisbon-LPPT	1.72					96.5%					2.13					12.02				
Porto-LPPR	0.77					93.4%					n/a					9.15				
Cascais-LPCS	0					82.6%					-					-				
Faro-LPFR	0					95.8%					-					-				
Flores-LPFL	0					n/a					-					-				
Horta-LPHR	0					93.8%					-					-				
Madeira-LPMA	0					93.2%					-					-				
Ponta Delgada-LPPD	0					98.2%					-					-				
Porto Santo-LPPS	0					92.9%					-					-				
Santa Maria-LPAZ	0					100.0%					-					-				

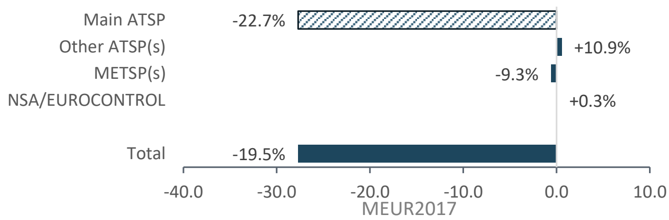
Contextual economic information: en-route air navigation services

FAB:	SW FAB
Main ATSP:	NAV Portugal
National currency:	EUR

Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	123 556 450	143 628 143	115 523 007	-6.5%	-19.6%
Inflation %	0.0%	0.3%	0.0%	0.0 p.p.	-0.3 p.p.
Real en-route costs (EUR2017)	122 008 573	141 784 582	114 095 861	-6.5%	-19.5%
Total en-route Service Units (TSUs)	1 511 080	4 059 860	1 556 016	+3.0%	-61.7%
Real en-route unit cost per Service Unit (EUR2017)	**80.74**	**34.92**	**73.33**	**-9.2%**	**+110.0%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-9.2%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+3.0%) actual TSUs and lower (-6.5%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-61.7%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Portugal ECZ rose substantially (+110.0% in real terms) mainly due to the exceptional -61.7% traffic reduction. In the meantime, en-route costs significantly reduced (-19.5%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: NAV Portugal - the main ATSP (-22.7%), the other ATSPs operating in the CZ (+10.9%), the MET service provider (-9.3%) and the NSA/EUROCONTROL (+0.3%). It should be noted that as of RP3, Portugal has revised the allocation of costs between en-route and terminal services for MET service provider and the NSA thus slightly affecting the comparison between 2019 and 2020 for these entities.
A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of NAV Portugal en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	82 290 554	102 492 125	74 316 683	-9.7%	-27.5%
Other operating costs	10 566 764	10 061 938	10 459 023	-1.0%	+3.9%
Depreciation	7 496 932	6 938 855	7 609 290	+1.5%	+9.7%
Cost of capital	2 099 712	2 509 382	1 912 585	-8.9%	-23.8%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total NAV Portugal en-route costs	**102 453 961**	**122 002 301**	**94 297 581**	**-8.0%**	**-22.7%**

Analysis at main ATSP level

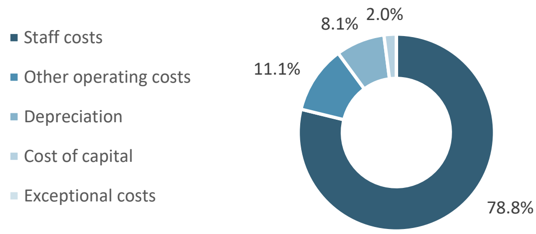
In 2020, NAV Portugal actual en-route costs were lower (-8.0%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, NAV Portugal actual 2020 en-route costs are significantly lower (-22.7%, or -27.7 MEUR2017) compared to those reported in 2019. This results from the combination of:

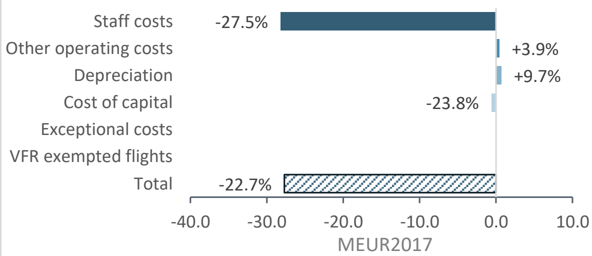
- significantly lower staff costs (-27.5%, or -28.2 MEUR2017);
- higher other operating costs (+3.9%, or +0.4 MEUR2017);
- higher depreciation costs (+9.7%, or +0.7 MEUR2017);
- significantly lower cost of capital (-23.8%, or -0.6 MEUR2017).

Cost reduction measures implemented by NAV Portugal included suspension of salary increases and overtime and reduction of contributions to the pension fund. Significantly lower cost of capital results from lower return on equity, as well as share of financing through equity.

NAV Portugal actual 2020 en-route costs by nature

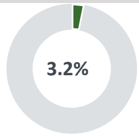


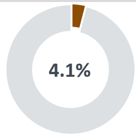
Actual costs variation by nature between 2019 and 2020



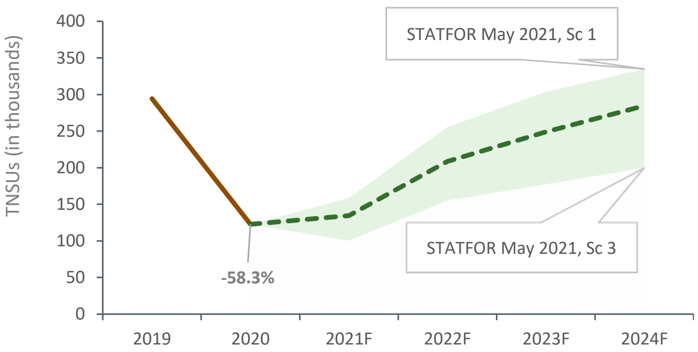
Contextual economic information: terminal air navigation services

Main ATSP:	NAV Portugal
National currency:	EUR
Number of airports in TCZ:	10

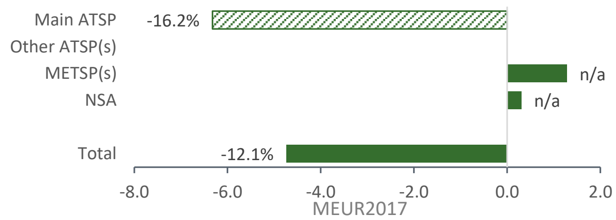




Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	39 638 152	34 829 936	-12.1%
Inflation %	0.3%	0.0%	-0.3 p.p.
Real terminal costs (EUR2017)	39 110 038	34 377 977	-12.1%
Total Terminal Navigation Service Units	294 319	122 723	-58.3%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**132.88**	**280.13**	**+110.8%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Portugal TCZ comprises 10 airports.

Between 2019 and 2020, the terminal unit costs of Portugal TCZ rose substantially (+110.8% in real terms) mainly due to the exceptional -58.3% traffic reduction. In the meantime, terminal costs significantly reduced (-12.1%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-58.3%) would not be recovered by 2024.

The significantly lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: NAV Portugal - the main ATSP (-16.2%). It should be noted that as of RP3, Portugal has revised the allocation of costs between en-route and terminal services for MET service provider and the NSA which resulted in terminal costs for these providers being reported in 2020 while they were not included in the terminal cost-base in 2019.

A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of NAV Portugal Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	32 835 381	26 612 844	-19.0%
Other operating costs	2 287 874	2 333 009	+2.0%
Depreciation	3 076 344	3 109 536	+1.1%
Cost of capital	910 440	731 912	-19.6%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total NAV Portugal terminal costs in TCZ	**39 110 038**	**32 787 301**	**-16.2%**

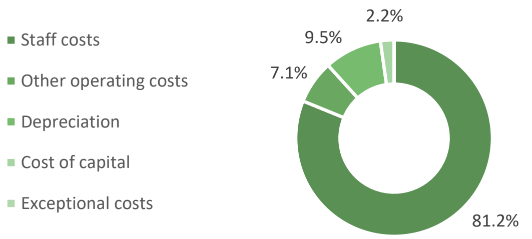
Analysis at main ATSP level

As indicated in the text box above, NAV Portugal actual 2020 terminal costs in TCZ are significantly lower (-16.2%, or -6.3 MEUR2017) than those reported in 2019. This results from the combination of:

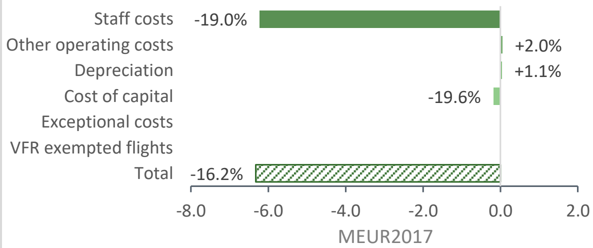
- significantly lower staff costs (-19.0%, or -6.2 MEUR2017);
- higher other operating costs (+2.0%, or +0.05 MEUR2017);
- slightly higher depreciation costs (+1.1%, or +0.03 MEUR2017);
- significantly lower cost of capital (-19.6%, or -0.2 MEUR2017).

Cost reduction measures implemented by NAV Portugal included suspension of salary increases and overtime and reduction of contributions to the pension fund. Significantly lower cost of capital results from lower return on equity, as well as share of financing through equity.

NAV Portugal actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	141 784 582	114 095 861	-19.5%
Real terminal costs (EUR2017)	39 110 038	34 377 977	-12.1%
Real gate-to-gate costs (EUR2017)	180 894 620	148 473 837	-17.9%
En-route share in gate-to-gate costs (%)	**78.4%**	**76.8%**	**-1.5 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Portugal significantly reduced (-17.9%, or -32.4 MEUR2017) in real terms. This is a combination of a significant reduction (-19.5%, or -27.7 MEUR2017) in en-route and a decrease (-12.1%, or -4.7 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (76.8%) slightly reduced (-1.5 p.p.) compared to the figure reported in 2019 (78.4%).

Breakdown of NAV Portugal gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	135 327 506	100 929 527	-25.4%
Other operating costs	12 349 813	12 792 032	+3.6%
Depreciation	10 015 199	10 718 826	+7.0%
Cost of capital	3 419 822	2 644 497	-22.7%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total NAV Portugal gate-to-gate costs	**161 112 339**	**127 084 882**	**-21.1%**

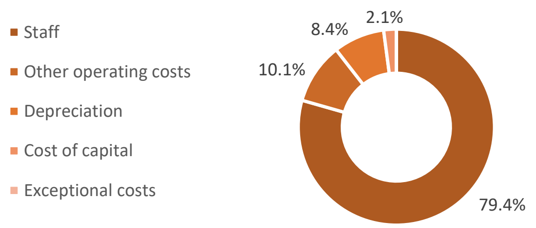
Analysis at main ATSP level

NAV Portugal actual 2020 gate-to-gate costs are significantly lower (-21.1%, or -34.0 MEUR2017) than those reported in 2019. This results from the combination of:

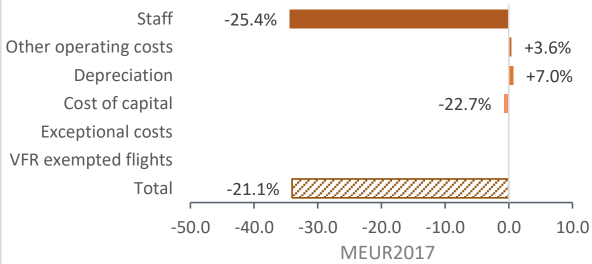
- significantly lower staff costs (-25.4%, or -34.4 MEUR2017);
- higher other operating costs (+3.6%, or +0.4 MEUR2017);
- higher depreciation costs (+7.0%, or +0.7 MEUR2017);
- significantly lower cost of capital (-22.7%, or -0.8 MEUR2017).

Details on the drivers behind the changes observed above are provided in the respective analyses of NAV Portugal at en-route and terminal charging zone level.

NAV Portugal actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Portugal

Annual Monitoring Report 2020
Local level view
Romania

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Effectiveness of Safety Management

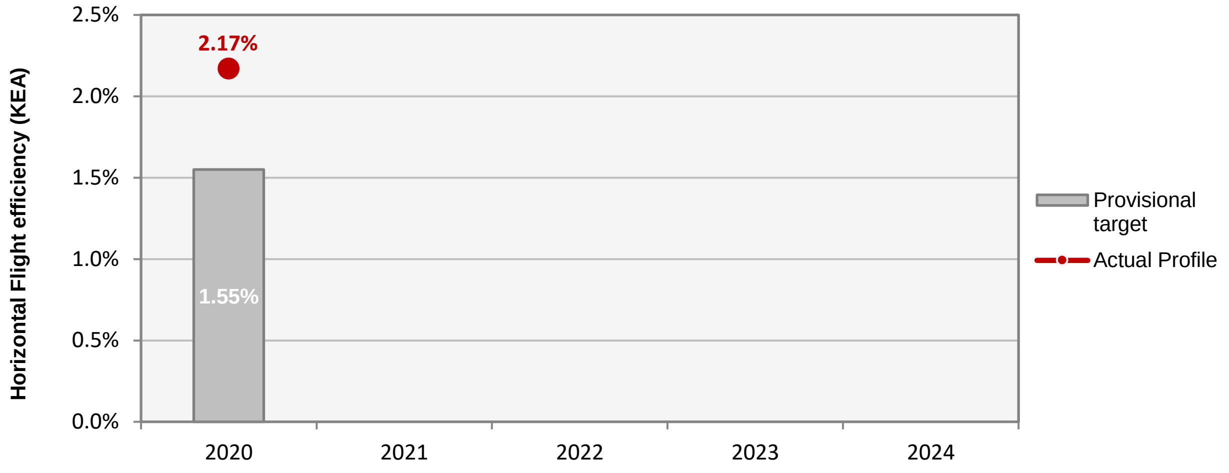
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
Romatsa	98	D	C	D	C	D

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence and as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

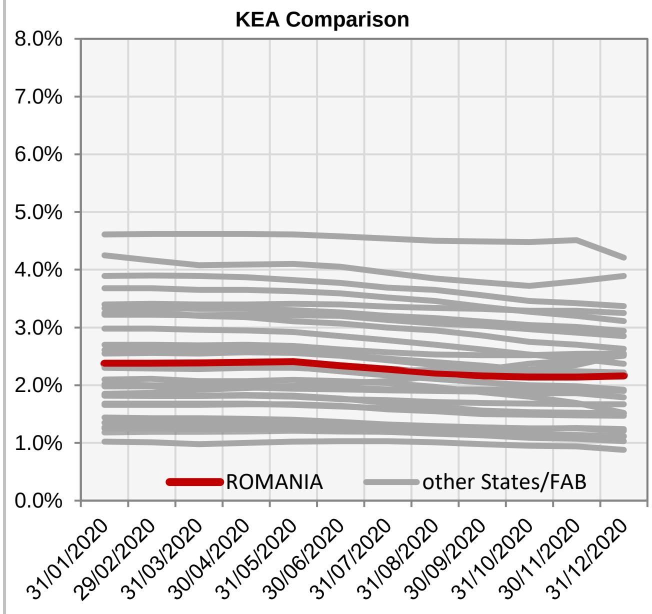
All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

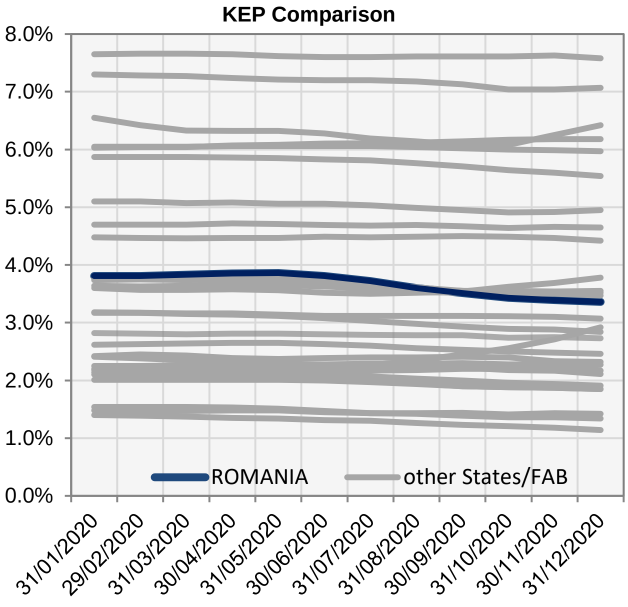
KEA	2020	2021	2022	2023	2024
Provisional target	1.55%				
Actual performance	2.17%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.37%	2.37%	2.38%	2.39%	2.40%	2.33%	2.27%	2.20%	2.17%	2.15%	2.15%	2.17%
KEP	3.81%	3.81%	3.83%	3.85%	3.86%	3.81%	3.72%	3.60%	3.51%	3.43%	3.39%	3.36%
KES	2.67%	2.67%	2.67%	2.68%	2.67%	2.61%	2.50%	2.37%	2.27%	2.19%	2.17%	2.17%



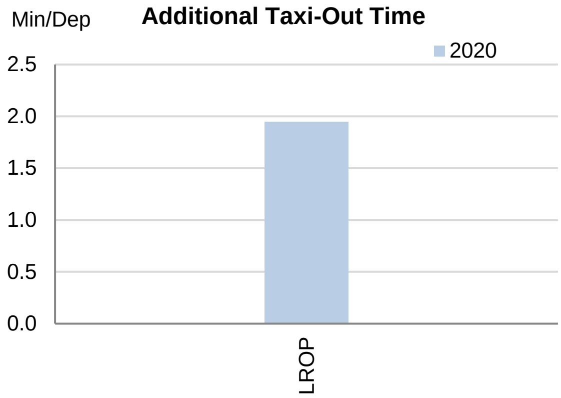


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

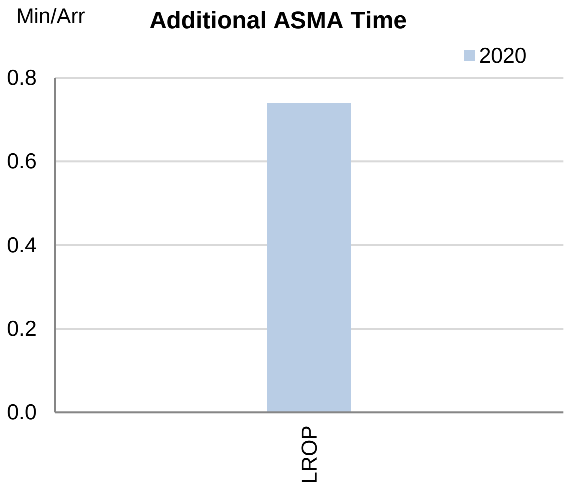
Romania includes 2 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Bucharest/Otopeni (LROP) must be monitored for additional taxi-out and ASMA times. The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly implemented where required and the monitoring of all environment indicators can be performed.
Traffic at these 2 airports decreased in 2020 by 56% with respect to 2019.
Despite the reduction in traffic, the impact on the additional times was not that significant (compared to other airports in Europe). Additional taxi-out times were 27% lower in 2020 compared to 2019, and additional ASMA times only 1% lower.

2. Additional Taxi-Out Time



Additional taxi-out times at Bucharest/Otopeni (LROP; 2019: 2.67 min/dep.; 2020: 1.95 min/dep.) decreased considerably as of the month of April. Nevertheless this decrease (-27%) due to the reduction in traffic was lower than at other European airports.
According to the Romanian monitoring report, following measures are planned or already implemented, although no dates are provided:
a) Implemented:
- clearance delivery position;
- ASMGCS - advance surface management ground control system;
- Common procedure between Bucharest Airports National Company and TWR Otopeni for repairing works periods on the manoeuvring area, i.e. pre-established alternative standard taxi routes;
- Common procedure regarding ATFM (according to EU Reg 255/2010) regarding the regulation of traffic in situations that may influence the airport's capacity.
b) Planned:
- AMAN - Arrival Manager.

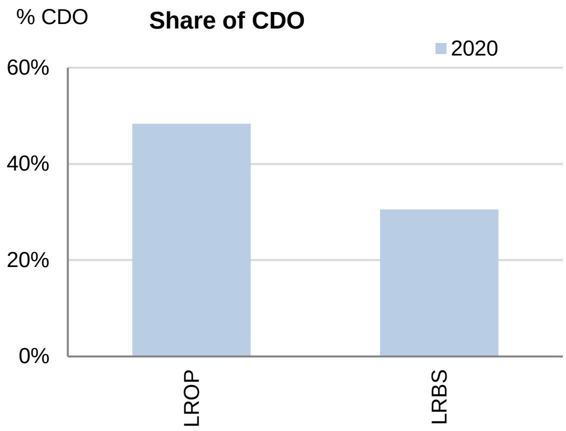
3. Additional ASMA Time



Contrary to the additional taxi-out times, and to the trend in the evolution of the additional ASMA times at most airports in Europe, these times at Bucharest/Otopeni did not really decreased much in 2020 (LROP; 2019: 0.75 min/arr.; 2020: 0.74 min/arr.)
According to the Romanian monitoring report, following measures are planned or already implemented, although no dates are provided:
a) Implemented:
- SID / STAR RNAV 1;
- as current practice, vectorizations for shortening the trajectories when the traffic is of low complexity (DIRECT TO);
- Bucharest TMA resectorisation - implementation of new sector: DIRECTOR.

b) Planned:
- implementation of AMAN - Arrival Manager;
- implementation of RNP (required navigation performance) approach procedures.

4. Share of arrivals applying CDO



Bucharest/Otopeni (LROP), being the major airport in the Romania, has the highest share of CDO flights: 48.3% which is above the overall RP3 value in 2020 (32.5%). Bucharest/Băneasa (LRBS) has a share of CDO flights slightly lower than the overall RP3 value.

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Bucharest - Otopeni-LROP	1.95					0.74					48%				
Bucharest - Băneasa-LRBS	-					-					31%				

Update on Military dimension of the plan

The FUA Concept is fully implemented in Romania at all specific levels, as follows: at Level 1 through National Air Space Management Council, at Level 2 through AMC, as civil-military body and at Level 3 through civil-military coordination offices collocated. At FAB level, an Air Space Policy Body is defined for strategic coordination between Romania and Bulgaria. Furthermore, Romanian operational procedures allow the crossing of most military training zones by civil aircraft with a prior coordination.

Military - related measures implemented or planned to improve capacity

No comment provided.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Romania	83%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Bucharest	N/A				

Initiatives implemented or planned to improve PI#6

NSA: PI monitored for statistical purposes, no target assigned in the Performance Plan.
The FUA Concept is fully implemented in Romania at all specific levels, as follows: at Level 1 through National Air Space Management Council, at Level 2 through AMC, as civil-military body and at Level 3 through civil-military coordination offices collocated. At FAB level, an Air Space Policy Body is defined for strategic coordination between Romania and Bulgaria. Furthermore, Romanian operational procedures allow the crossing of most military training zones by civil aircraft with a prior coordination.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Romania	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Bucharest	N/A				

Initiatives implemented or planned to improve PI#7

No comment provided.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Romania	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Bucharest	N/A				

Initiatives implemented or planned to improve PI#8

No comment provided.

Minutes of ATFM en-route delay

	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.14					
Actual performance	0.00					

NSA's assessment of capacity performance

The significantly reduced traffic in the pandemic context allowed during 2020 optimised traffic flows and values (0) for ATFM delay per flight. Nevertheless, in the perspective of future traffic recovery, ROMATSA continues the airspace structure improvement process, by supporting Free Route operations expansion in the context of SEEFRA, by removing the ATS Routes above FL105 within Bucuresti CTA during Summer Season 2021 and by sectorisation improvements (planned for Winter Season 2021-2022).

Monitoring process for capacity performance

ROMATSA provided regularly inputs on capacity availability in the context of NOP Rolling Seasonal Plan implemented by the Network manager at European network level. The expected en-route performance was and is regularly evaluated by the NM for each ACC, including Bucuresti ACC, in terms of planned/maximum sector openings in relation with the estimated traffic demand.

NSA: capacity actual values are monitored using the data officially published by EUROCONTROL (e.g. PRU dashboard, Performance Review Reports), PRB monitoring reports, ESSKY, etc. and trends are analysed periodically and if the case may be, corrective measures are applied . No corrective actions were required for 2020, target has been met.

Capacity Planning

In the context of COVID-19 crisis, the capacity as previously planned and published within an annual NOP (Network Operations Plan) has been adapted accordingly by adoption of capacity plans under a NOP Rolling Seasonal Plan format, including periods of 6 weeks, based on the expected traffic demand regularly provided by the Network Manager.

These plans refer to:
- sector openings
- maximum possible sector openings
- availability of support of operational staff.
- special events and projects, etc.

Bucuresti ACC ensured a stable sector opening plan with no sector capacity reduction throughout this difficult period, with the possibility to increase the number of sectors plan, if the traffic is increasing and support staff working as normal.

ATCO in OPS (FTE)

Bucharest ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	245	250					As presented during the RP2 revision process, ROMATSA faces an ageing ATCO personnel. This is especially true in ACC Bucharest, where more than 1/3 of ATCOs are over 50 years old and will be over age 55 at the end of RP3. It takes between 3 to 5 years to fully train and authorize an ATCO for ACC, therefore a recruitment process was started in 2017 and should continue until the end of RP3, as was approved through the RP2 revision in December 2018, to guarantee proper staffing levels to ensure safety and capacity. Due to the impact of the COVID19 pandemic, the recruitment process was temporary frozen and will be shifted accordingly.
Actual	233	225					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance
The Bucharest FIR experienced a traffic reduction of 57% from 2019 levels, to 320k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

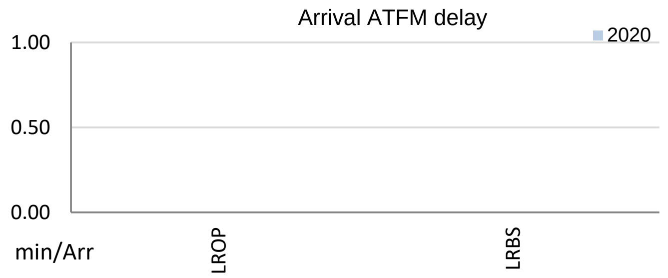
En route Capacity Incentive Scheme						
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional National Target	0.04					Only C, R, S, T, M P causes are considered for the incentive scheme.
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Romania includes 2 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Bucharest/Otopeni (LROP) must be monitored for the pre-departure delay indicators. The Airport Operator Data Flow, necessary for the monitoring of these delays, is correctly implemented where required and the monitoring of all capacity indicators can be performed. Nevertheless, the quality of the reporting from Bucharest does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at these 2 airports decreased in 2020 by 56% with respect to 2019. Average zero delays were observed at both airports in 2020 and slot adherence at national level was 96.6%.

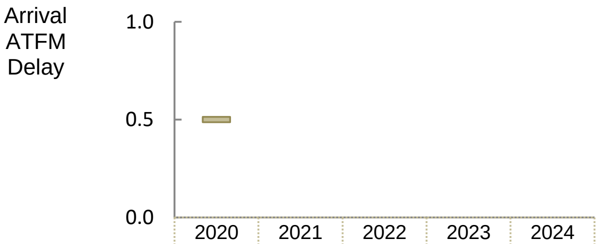
2. Arrival ATFM Delay



The significantly reduced traffic due to the pandemic context allowed ROMATSA to reach the capacity indicator for terminal and airport with 0 average delays.
In 2020 only a 43 minutes of ATFM delay at LROP were due only to aerodrome capacity before the start of the pandemic.

According to the Romanian monitoring report: *ROMATSA and Bucharest Airports National Company continue to work together to ensure optimum capacity level at terminal level as this impacts the entire network. On one hand ROMATSA has implemented at Otopeni TWR a different ATM system with A-SMGCS component, composed of a surveillance subsystem (operational for over three years) and an electronic flight strips subsystem (transferred into operations on April 8th 2019), interfaced via OLDI with the System covering the rest of the ATS units.*
There is in place also a common procedure between Bucharest Airports National Company and TWR Otopeni for repairing works periods on the manoeuvring area, i.e. pre-established alternative standard taxi routes;
According to EU Reg 255/2010 a common procedure regarding ATFM for the regulation of traffic in situations that may influence the airport's capacity is in place.
Implementation of AMAN at Bucharest APP is foreseen also during RP3.

3. Arrival ATFM Delay – National Target and Incentive Scheme

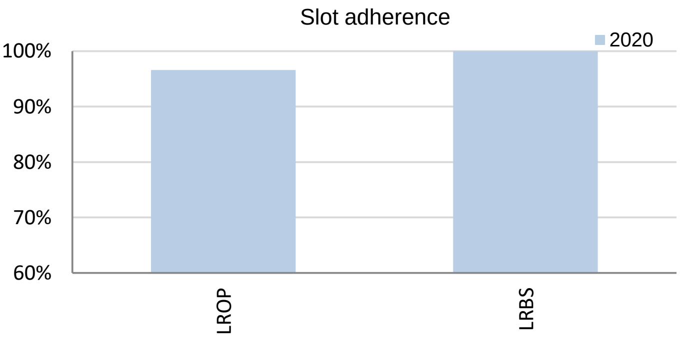


	2020	2021	2022	2023	2024
Actual	0.00				
Target	0.50				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Bucharest/Otopeni virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
Only 17 departures in total from Bucharest/Băneasa (LRBS) were regulated in the entire year, with a 100% compliance.
The national average, driven by Bucharest/Otopeni, was 96.6%.With regard to the 3.4% of flights that did not adhere, 3% was early and 0.4% was late.

The Romanian NSA reports that Performance improved compared to 2019. According to EU Reg 255/2010 a common procedure regarding ATFM for the regulation of traffic in situations that may influence the airport's capacity is in place between Bucharest Airports National Company and ROMATSA.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Bucharest/Otopeni (the only Romanian airport subject to monitoring of this indicator).
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Bucharest/Otopeni (LROP) was above 40% since March 2020 (preventing the calculation of this indicator) due to the special traffic composition during the months of the pandemic. LROP had proper reporting before March 2020.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Bucharest/Otopeni (LROP) in 2020 was 10.22 min/dep. The higher delays per flight were observed in the second trimester of the year, due to the lower traffic and extraordinary circumstances.
This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

7. Appendix

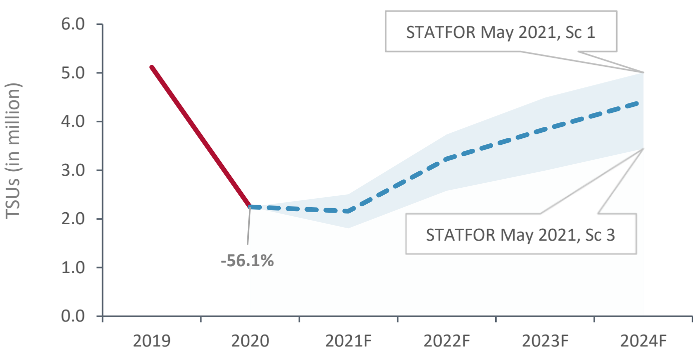
n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Bucharest - Otopeni-LROP	0					96.6%					n/a					10.22				
Bucharest - Băneasa-LRBS	0					100.0%					-					-				

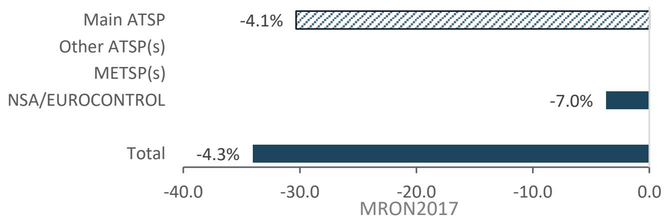
Contextual economic information: en-route air navigation services

FAB:	DANUBE FAB
Main ATSP:	ROMATSA
National currency:	RON
Exchange rate:	1 EUR = 4.56629 RON

Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal RON)	874 324 958	849 545 633	826 973 932	-5.4%	-2.7%
Inflation %	2.5%	3.9%	2.3%	-0.2 p.p.	-1.6 p.p.
Real en-route costs (RON2017)	801 772 771	794 377 327	760 330 275	-5.2%	-4.3%
Total en-route Service Units (TSUs)	2 205 000	5 117 438	2 245 622	+1.8%	-56.1%
Real en-route unit cost per Service Unit (RON2017)	**363.62**	**155.23**	**338.58**	**-6.9%**	**+118.1%**
Real en-route unit cost per Service Unit (EUR2017)	**79.63**	**33.99**	**74.15**	**-6.9%**	**+118.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-6.9%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+1.8%) actual TSUs and lower (-5.2%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-56.1%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Romania ECZ rose substantially (+118.1% in real terms) mainly due to the exceptional -56.1% traffic reduction. In the meantime, en-route costs decreased (-4.3%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: ROMATSA - the main ATSP (-4.1%) and the NSA/EUROCONTROL (-7.0%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of ROMATSA en-route ANS costs (real RON2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	582 517 938	569 103 874	547 568 188	-6.0%	-3.8%
Other operating costs	85 310 408	72 327 719	78 336 208	-8.2%	+8.3%
Depreciation	40 596 391	36 142 807	38 596 528	-4.9%	+6.8%
Cost of capital	40 116 163	28 624 261	46 035 694	+14.8%	+60.8%
Exceptional costs	0	34 658 875	0		-100.0%
VFR exempted flights	0	0	0		
Total ROMATSA en-route costs	**748 540 900**	**740 857 536**	**710 536 616**	**-5.1%**	**-4.1%**

Analysis at main ATSP level

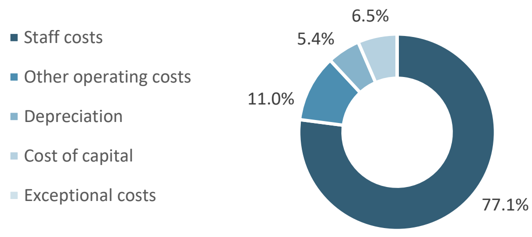
In 2020, ROMATSA actual en-route costs were lower (-5.1%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, ROMATSA actual 2020 en-route costs are lower (-4.1%, or -30.3 MRON2017) compared to those reported in 2019. This results from the combination of:

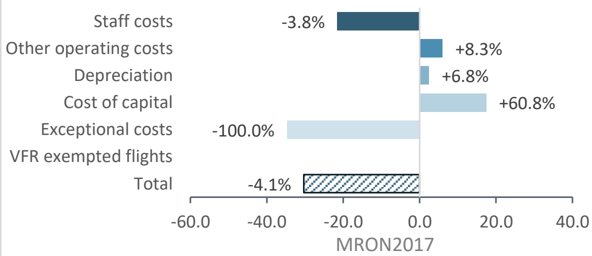
- lower staff costs (-3.8%, or -21.5 MRON2017);
- higher other operating costs (+8.3%, or +6.0 MRON2017);
- higher depreciation costs (+6.8%, or +2.5 MRON2017);
- significantly higher cost of capital (+60.8%, or +17.4 MRON2017);
- no exceptional costs reported in 2020.

ROMATSA implemented cost reduction measures that affected recruitment and promotions, salaries and additional benefits, pensions and health insurance contributions, as well as delayed investments.

ROMATSA actual 2020 en-route costs by nature

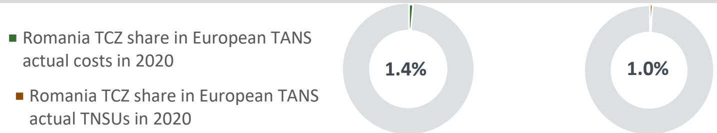


Actual costs variation by nature between 2019 and 2020

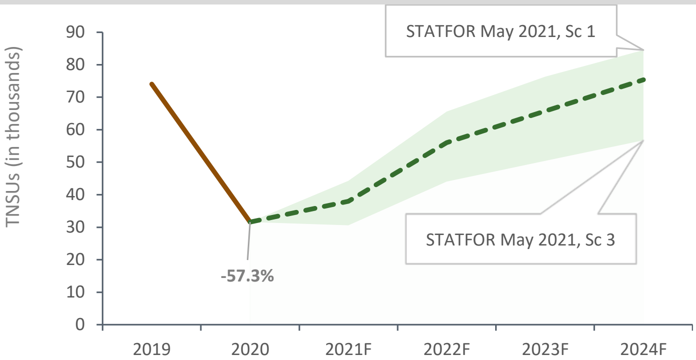


Contextual economic information: terminal air navigation services

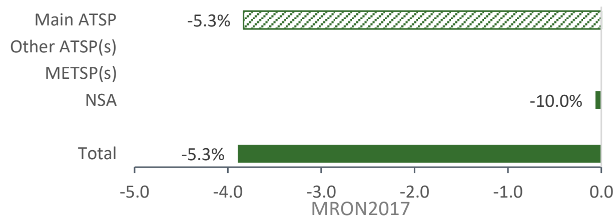
Main ATSP:	ROMATSA
National currency:	RON
Number of airports in TCZ:	2



Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal RON)	78 798 162	76 025 208	-3.5%
Inflation %	3.9%	2.3%	-1.6 p.p.
Real terminal costs (RON2017)	73 519 661	69 623 735	-5.3%
Total Terminal Navigation Service Units	74 054	31 587	-57.3%
Real terminal unit cost per Terminal Navigation Service Unit (RON2017)	**992.79**	**2 204.19**	**+122.0%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**217.42**	**482.71**	**+122.0%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Romania TCZ comprises 2 airports.

Between 2019 and 2020, the terminal unit costs of Romania TCZ rose substantially (+122.0% in real terms) mainly due to the exceptional -57.3% traffic reduction. In the meantime, terminal costs decreased (-5.3%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-57.3%) is expected to be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: ROMATSA - the main ATSP (-5.3%) and the NSA (-10.0%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of ROMATSA Terminal ANS costs in TCZ (real RON2017)	2019A	2020A	2020A vs 2019A
Staff	54 864 321	52 160 447	-4.9%
Other operating costs	6 840 187	7 983 430	+16.7%
Depreciation	4 551 905	4 162 943	-8.5%
Cost of capital	3 651 739	4 774 530	+30.7%
Exceptional costs	3 080 789	0	-100.0%
VFR exempted flights	-96 985	-22 477	-76.8%
Total ROMATSA terminal costs in TCZ	**72 891 957**	**69 058 873**	**-5.3%**

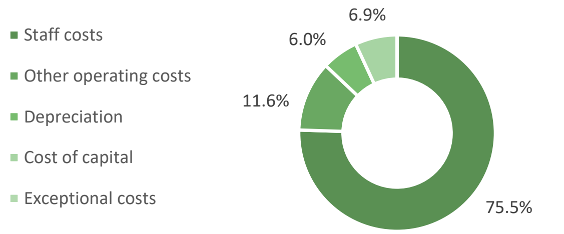
Analysis at main ATSP level

As indicated in the text box above, ROMATSA actual 2020 terminal costs in TCZ are lower (-5.3%, or -3.8 MRON2017) than those reported in 2019. This results from the combination of:

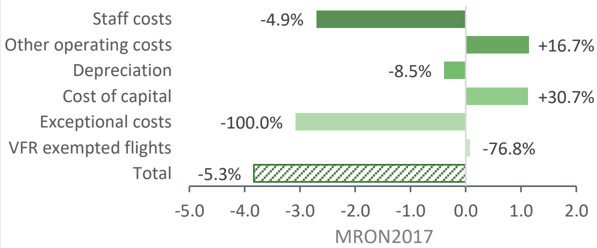
- lower staff costs (-4.9%, or -2.7 MRON2017);
- significantly higher other operating costs (+16.7%, or +1.1 MRON2017);
- lower depreciation costs (-8.5%, or -0.4 MRON2017);
- significantly higher cost of capital (+30.7%, or +1.1 MRON2017);
- no exceptional costs reported in 2020;
- significantly lower deduction for VFR exempted flights (-76.8%).

According to ROMATSA, the higher cost of capital reflects the commissioning of a new ATM system. Furthermore, the increase in non-staff operating costs is explained by new service contracts related to Datalink and PBN.

ROMATSA actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (RON2017)	794 377 327	760 330 275	-4.3%
Real terminal costs (RON2017)	73 519 661	69 623 735	-5.3%
Real gate-to-gate costs (RON2017)	867 896 988	829 954 010	-4.4%
En-route share in gate-to-gate costs (%)	**91.5%**	**91.6%**	**+0.1 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Romania decreased (-4.4%, or -37.9 MRON2017) in real terms. This is a combination of a reduction (-4.3%, or -34.0 MRON2017) in en-route and a decrease (-5.3%, or -3.9 MRON2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (91.6%) remained fairly constant (+0.1 p.p.) compared to the figure reported in 2019 (91.5%).

Breakdown of ROMATSA gate-to-gate ANS costs (real RON2017)	2019A	2020A	2020A vs 2019A
Staff	623 968 196	599 728 634	-3.9%
Other operating costs	79 167 905	86 319 637	+9.0%
Depreciation	40 694 712	42 759 471	+5.1%
Cost of capital	32 276 001	50 810 224	+57.4%
Exceptional costs	37 739 664	0	-100.0%
VFR exempted flights	-96 985	-22 477	-76.8%
Total ROMATSA gate-to-gate costs	**813 749 493**	**779 595 489**	**-4.2%**

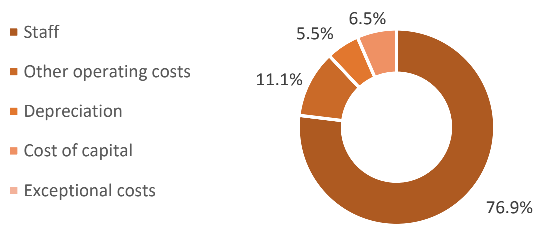
Analysis at main ATSP level

ROMATSA actual 2020 gate-to-gate costs are lower (-4.2%, or -34.2 MRON2017) than those reported in 2019. This results from the combination of:

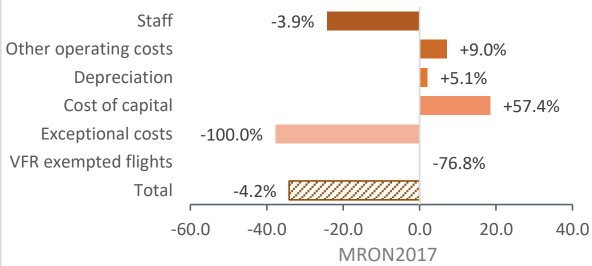
- lower staff costs (-3.9%, or -24.2 MRON2017);
- higher other operating costs (+9.0%, or +7.2 MRON2017);
- higher depreciation costs (+5.1%, or +2.1 MRON2017);
- significantly higher cost of capital (+57.4%, or +18.5 MRON2017);
- no exceptional costs reported in 2020;
- significantly lower deduction for VFR exempted flights (-76.8%).

Details on the drivers behind the changes observed above are provided in the respective analyses of ROMATSA at en-route and terminal charging zone level.

ROMATSA actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Romania

Annual Monitoring Report 2020

Local level view

Slovakia

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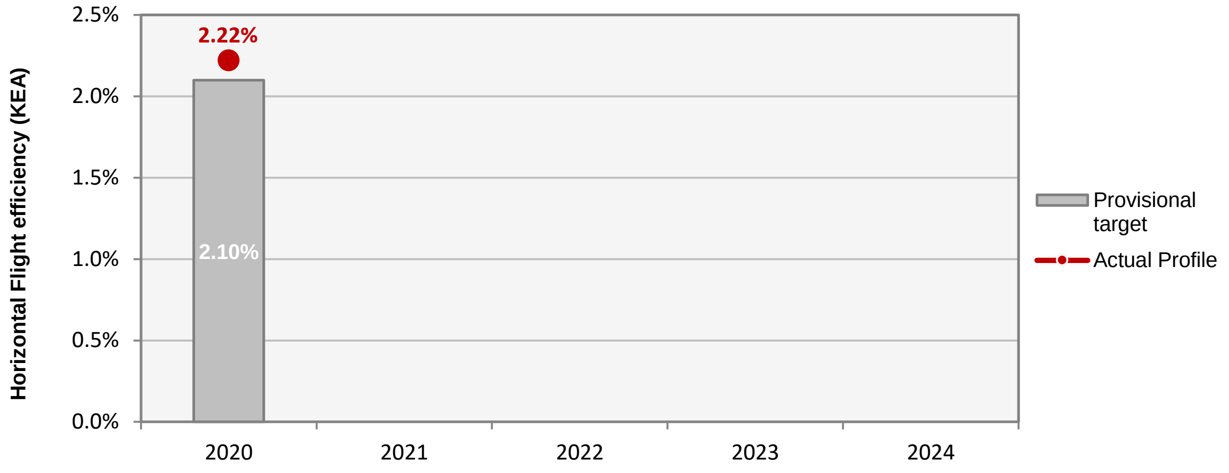
Effectiveness of Safety Management						
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
LPS SR	84	B	B	D	C	B

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

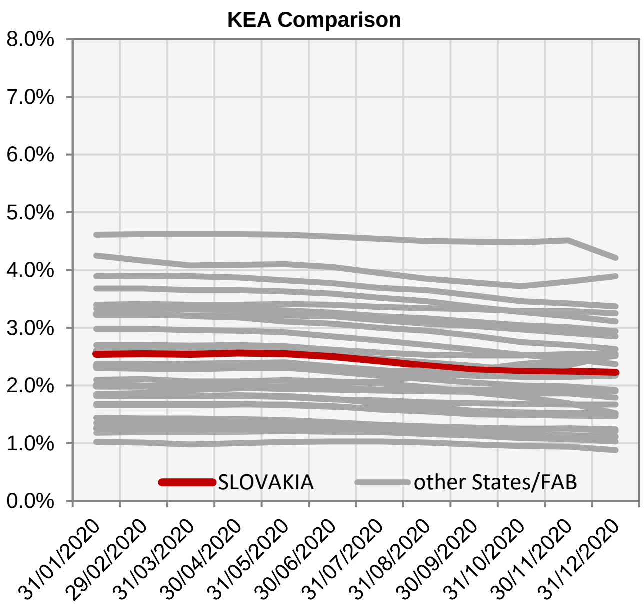
Two out of five EoSM components of the ANSP meet the 2024 target level. Three components, namely "Safety Culture", "Safety Policy and Objectives" and "Safety Promotion", are at level B below 2024 target levels and are expected to improve in the next years of RP3.

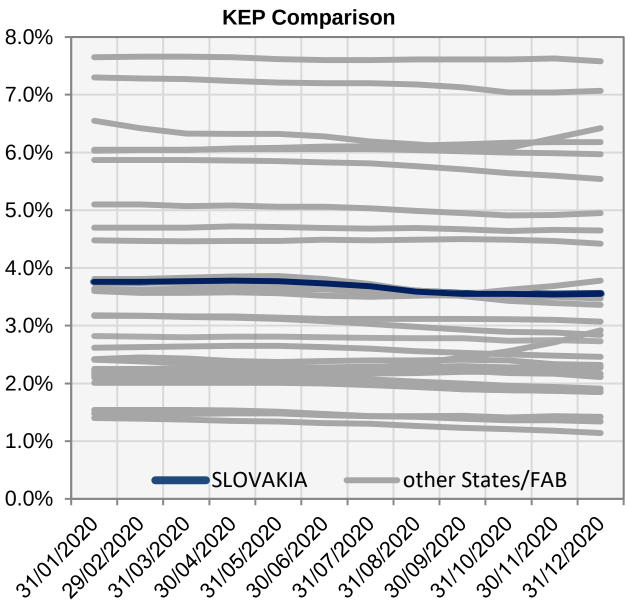
KEA	2020	2021	2022	2023	2024
Provisional target	2.10%				
Actual performance	2.22%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	2.55%	2.56%	2.55%	2.57%	2.56%	2.51%	2.43%	2.35%	2.28%	2.25%	2.24%	2.22%
KEP	3.76%	3.76%	3.77%	3.78%	3.77%	3.73%	3.68%	3.59%	3.55%	3.55%	3.54%	3.55%
KES	3.22%	3.21%	3.22%	3.24%	3.24%	3.20%	3.15%	3.08%	3.02%	2.98%	2.95%	2.92%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Update on Military dimension of the plan

Environment: No impact on environment.

Capacity: No impact on capacity.

Military - related measures implemented or planned to improve capacity

Environment: Nil.

Capacity: Nil.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Slovakia	42%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Bratislava	53%				

Initiatives implemented or planned to improve PI#6

No comment provided. [No explanation for considerable difference between Slovakia and Bratislave ACC, especially since only one ACC in State.]

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Slovakia	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Bratislava	N/A				

Initiatives implemented or planned to improve PI#7

There are no data available in Slovakia. There is planned new system for monitoring this data.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Slovakia	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Bratislava	N/A				

Initiatives implemented or planned to improve PI#8

There are no data available in Slovakia. There is planned new system for monitoring this data.

Minutes of ATFM en-route delay						
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional National Target	0.60					
Actual performance	0.00					

NSA's assessment of capacity performance

There were no delay due to low traffic caused by the COVID-19.

Monitoring process for capacity performance

Annual monitoring of capacity performance has been implemented as from y2020.

Capacity Planning

Capacity of ACC is sufficient with respect to expected demand in a period till y2024.

ATCO in OPS (FTE)							
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**Observations**
Planned (Perf Plan)	53.6	62.6					Extensive recruitment of new trainees continues in spite of COVID-19 crisis. As from Summer 2020 horizontal split of the most regulated sector (according to y2019) has been introduced into operations
Actual	54	53					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

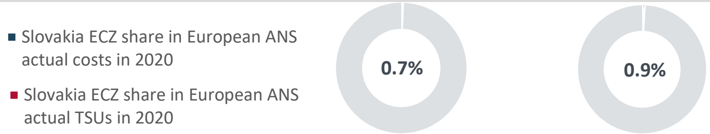
The Bratislava FIR experienced a traffic reduction of 64% from 2019 levels, to 201k flights. The traffic level was accommodated with zero en route ATFM delays to airspace users.

En route Capacity Incentive Scheme						
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional National Target	0.60					Only C, R, S, T, M P causes are considered for the incentive scheme. No bonus allocated.
Deadband +/-						
Actual	0.00					

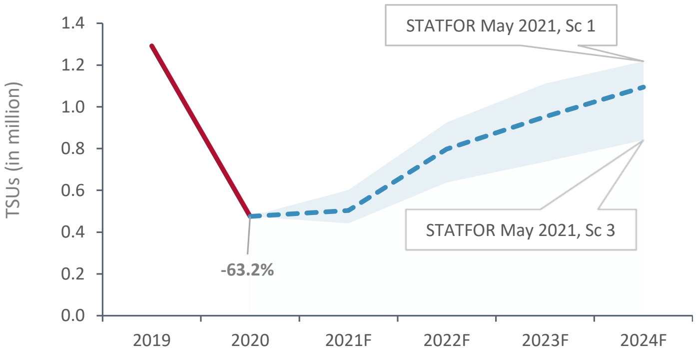
In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

Contextual economic information: en-route air navigation services

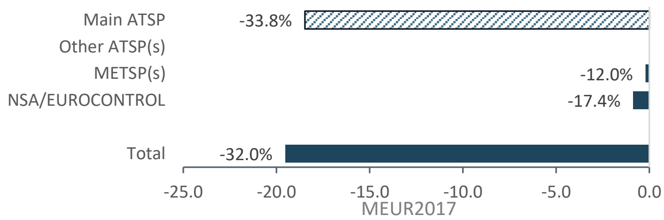
FAB:	FAB CE
Main ATSP:	LPS
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	44 440 316	63 734 085	43 878 140	-1.3%	-31.2%
Inflation %	2.4%	2.8%	2.0%	-0.4 p.p.	-0.8 p.p.
Real en-route costs (EUR2017)	41 703 073	61 105 586	41 579 250	-0.3%	-32.0%
Total en-route Service Units (TSUs)	476 112	1 291 606	475 362	-0.2%	-63.2%
Real en-route unit cost per Service Unit (EUR2017)	**87.59**	**47.31**	**87.47**	**-0.1%**	**+84.9%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were mostly unchanged (-0.1%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of mostly stable (-0.2%) actual TSUs and mostly stable (-0.3%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-63.2%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Slovakia ECZ rose substantially (+84.9% in real terms) mainly due to the exceptional -63.2% traffic reduction. In the meantime, en-route costs significantly reduced (-32.0%) in real terms.

The significantly lower en-route costs at CZ level are a combination of the following changes observed for the different entities: LPS - the main ATSP (-33.8%), the MET service provider (-12.0%) and the NSA/EUROCONTROL (-17.4%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of LPS en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	25 069 598	39 134 679	23 038 782	-8.1%	-41.1%
Other operating costs	7 629 344	8 258 129	6 337 623	-16.9%	-23.3%
Depreciation	5 015 919	5 085 674	4 866 473	-3.0%	-4.3%
Cost of capital	2 033 605	2 151 700	1 905 934	-6.3%	-11.4%
Exceptional costs	0	0	0		
VFR exempted flights	-38 925	-44 084	-39 625	+1.8%	-10.1%
Total LPS en-route costs	**39 709 540**	**54 586 098**	**36 109 187**	**-9.1%**	**-33.8%**

Analysis at main ATSP level

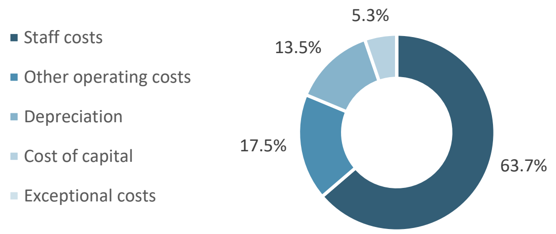
In 2020, LPS actual en-route costs were lower (-9.1%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, LPS actual 2020 en-route costs are significantly lower (-33.8%, or -18.5 MEUR2017) compared to those reported in 2019. This results from the combination of:

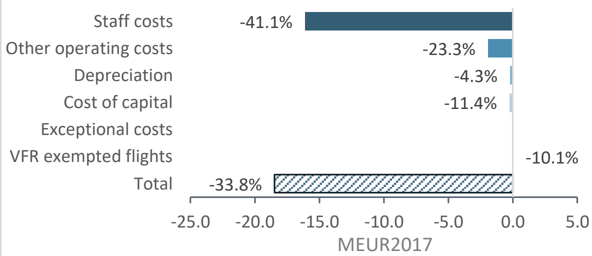
- significantly lower staff costs (-41.1%, or -16.1 MEUR2017);
- significantly lower other operating costs (-23.3%, or -1.9 MEUR2017);
- lower depreciation costs (-4.3%, or -0.2 MEUR2017);
- significantly lower cost of capital (-11.4%, or -0.2 MEUR2017);
- significantly lower deduction for VFR exempted flights (-10.1%).

LPS implemented measures that affected recruitment, rationalisation of organisational structure, salaries and other staff benefits (bonuses and rewards), social fund contributions, education costs, non-essential maintenance, services, material consumption and travel costs. Lower return on equity rate was used to compute the cost of capital.

LPS actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



Slovakia terminal charging zone(s) are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted and no analysis is performed for monitoring purposes.

Notes on data and information submitted by Slovakia

Annual Monitoring Report 2020
Local level view
Slovenia

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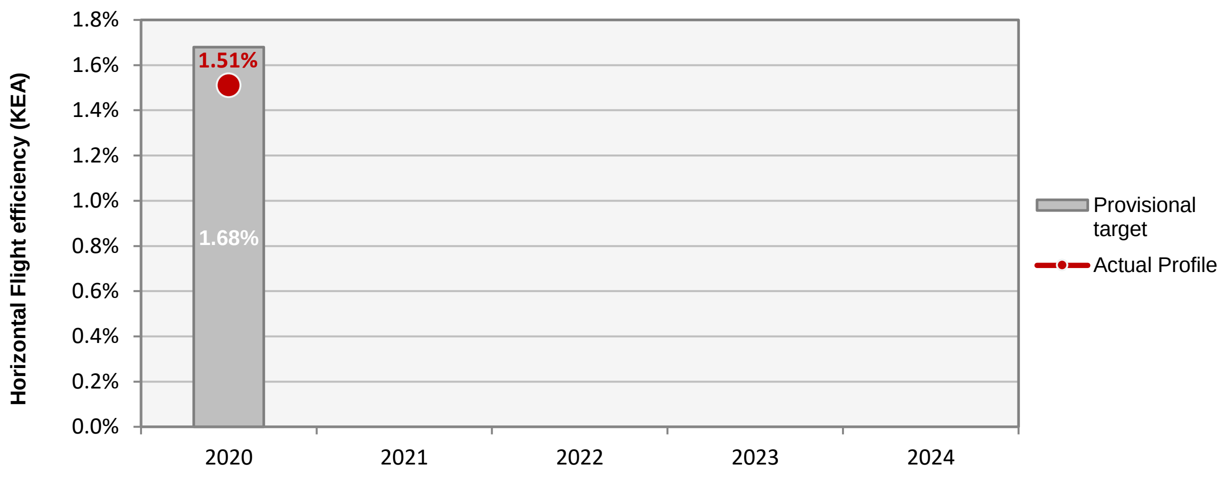
Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
Slovenia Control	75	C	C	C	C	C
Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.						

Observations

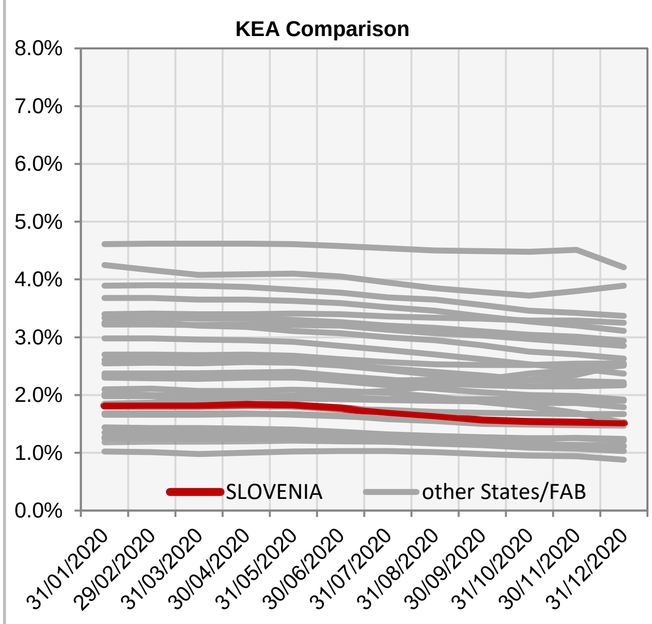
Four out of five EoSM components of the ANSP meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level, at level C. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

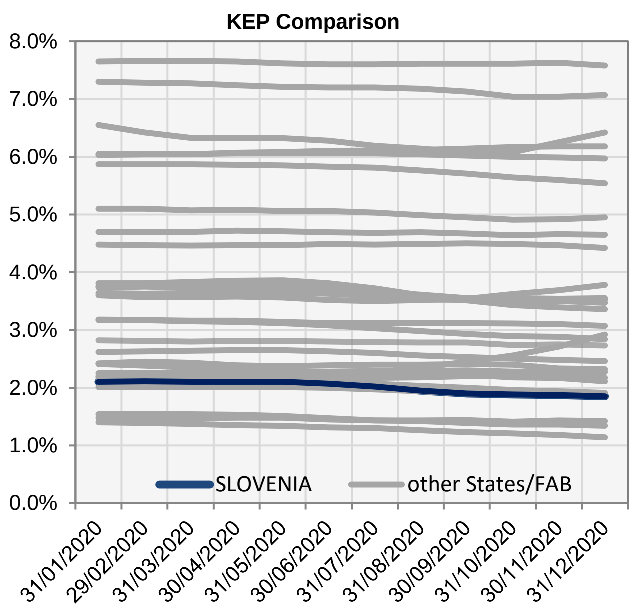
KEA	2020	2021	2022	2023	2024
Provisional target	1.68%				
Actual performance	1.51%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.82%	1.82%	1.82%	1.83%	1.82%	1.77%	1.69%	1.63%	1.56%	1.53%	1.52%	1.51%
KEP	2.10%	2.11%	2.10%	2.10%	2.10%	2.07%	2.02%	1.95%	1.90%	1.88%	1.87%	1.85%
KES	1.87%	1.87%	1.87%	1.87%	1.86%	1.83%	1.77%	1.70%	1.64%	1.60%	1.57%	1.55%





The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

Update on Military dimension of the plan

Environment: No impact on environment.

Capacity: No impact on capacity.

Military - related measures implemented or planned to improve capacity

Environment: N/A

Capacity: N/A

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Slovenia	N/A				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Ljubljana	N/A				

Initiatives implemented or planned to improve PI#6

No comment provided.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Slovenia	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Ljubljana	N/A				

Initiatives implemented or planned to improve PI#7

No comment provided.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Slovenia	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Ljubljana	N/A				

Initiatives implemented or planned to improve PI#8

No comment provided.

Minutes of ATFM en-route delay						
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional National Target	0.23					
Actual performance	0.00					

NSA's assessment of capacity performance

Operationally no issues, needed capacity provided throughout 2020, no major COVID19 infections experienced due to effective protective measures implemented in all areas.

Monitoring process for capacity performance

No comment provided.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)

Ljubljana ACC	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Observations**
Planned (Perf Plan)	65.5	68.5					OJT training stopped for 3 ATCOs due Covid-19.
Actual	65.5	65.5					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The Ljubljana FIR experienced a traffic reduction of 58% from 2019 levels, to 195k flights. The traffic level was accommodated with practically zero ATFM delays to airspace users.

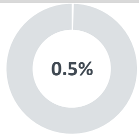
En route Capacity Incentive Scheme

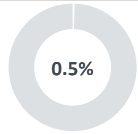
	2020	**2021**	**2022**	**2023**	**2024**	**Observations**
Provisional National Target	0.23					Only C, R, S, T, M P causes are considered for the incentive scheme.
Deadband +/-						
Actual	0.00					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

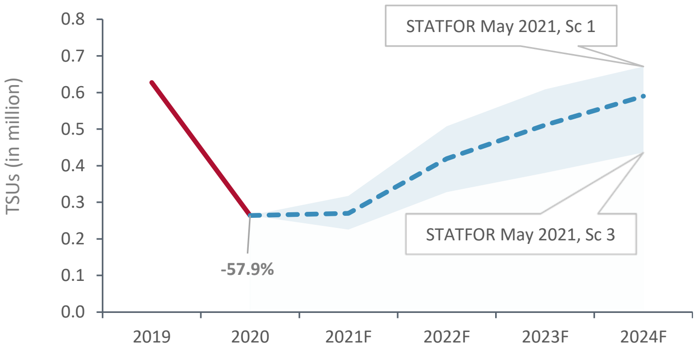
Contextual economic information: en-route air navigation services

FAB:	FAB CE
Main ATSP:	Slovenia Control
National currency:	EUR

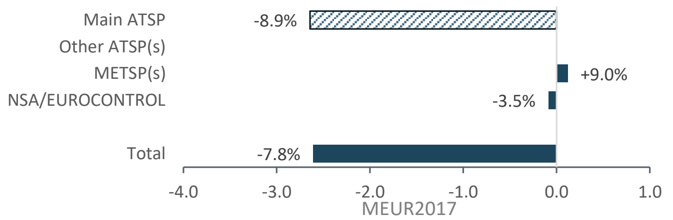




Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	30 874 795	34 415 995	31 716 704	+2.7%	-7.8%
Inflation %	0.5%	1.7%	0.0%	-0.5 p.p.	-1.7 p.p.
Real en-route costs (EUR2017)	29 955 813	33 483 887	30 876 185	+3.1%	-7.8%
Total en-route Service Units (TSUs)	261 471	627 329	263 994	+1.0%	-57.9%
Real en-route unit cost per Service Unit (EUR2017)	**114.57**	**53.38**	**116.96**	**+2.1%**	**+119.1%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were higher (+2.1%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+1.0%) actual TSUs and higher (+3.1%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-57.9%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Slovenia ECZ rose substantially (+119.1% in real terms) mainly due to the exceptional -57.9% traffic reduction. In the meantime, en-route costs decreased (-7.8%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: Slovenia Control - the main ATSP (-8.9%), the MET service provider (+9.0%) and the NSA/EUROCONTROL (-3.5%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of Slovenia Control en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	17 182 576	20 228 733	17 454 466	+1.6%	-13.7%
Other operating costs	3 676 339	3 962 212	4 195 078	+14.1%	+5.9%
Depreciation	3 706 897	3 619 013	3 796 642	+2.4%	+4.9%
Cost of capital	1 500 816	1 631 649	1 447 170	-3.6%	-11.3%
Exceptional costs	0	188 356	93 534		-50.3%
VFR exempted flights	0	0	0		
Total Slovenia Control en-route costs	**26 066 628**	**29 629 964**	**26 986 891**	**+3.5%**	**-8.9%**

Analysis at main ATSP level

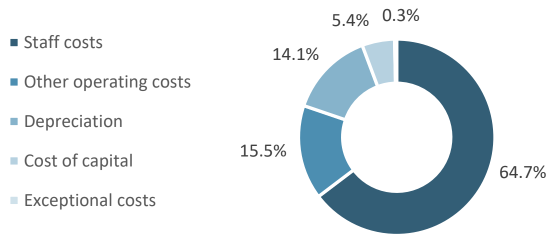
In 2020, Slovenia Control actual en-route costs were higher (+3.5%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, Slovenia Control actual 2020 en-route costs are lower (-8.9%, or -2.6 MEUR2017) compared to those reported in 2019. This results from the combination of:

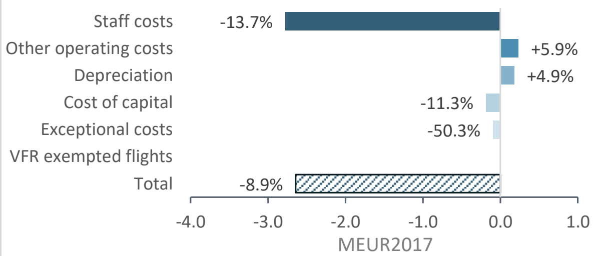
- significantly lower staff costs (-13.7%, or -2.8 MEUR2017);
- higher other operating costs (+5.9%, or +0.2 MEUR2017);
- higher depreciation costs (+4.9%, or +0.2 MEUR2017);
- significantly lower cost of capital (-11.3%, or -0.2 MEUR2017);
- significantly lower exceptional costs (-50.3%, or -0.1 MEUR2017).

Slovenia Control implemented cost-cutting measures that affected recruitment of new ATCOs, the level of staff costs and non-staff operating costs. Slovenia also indicates that investment projects were delayed in 2020.

Slovenia Control actual 2020 en-route costs by nature



Actual costs variation by nature between 2019 and 2020



Slovenia terminal charging zone(s) are not subject to the performance and charging regulations in RP3. For this reason, no Terminal Reporting Tables and corresponding Additional Information were submitted and no analysis is performed for monitoring purposes.

Notes on data and information submitted by Slovenia

Annual Monitoring Report 2020
Local level view
Spain

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Effectiveness of Safety Management						
	Score	**Safety Culture**	**Safety Policy and Objectives**	**Safety Risk Management**	**Safety Assurance**	**Safety Promotion**
ENAIRE	100	D	D	D	D	D
FERRONATS	88	C	C	C	C	C

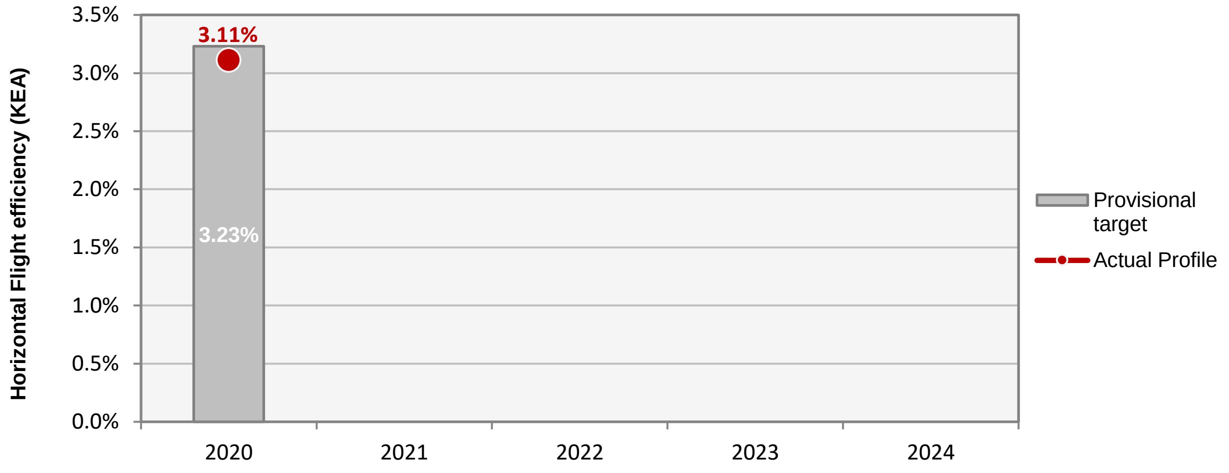
Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

All five EoSM components of ENAIRE meet, or exceed, already the 2024 target level.

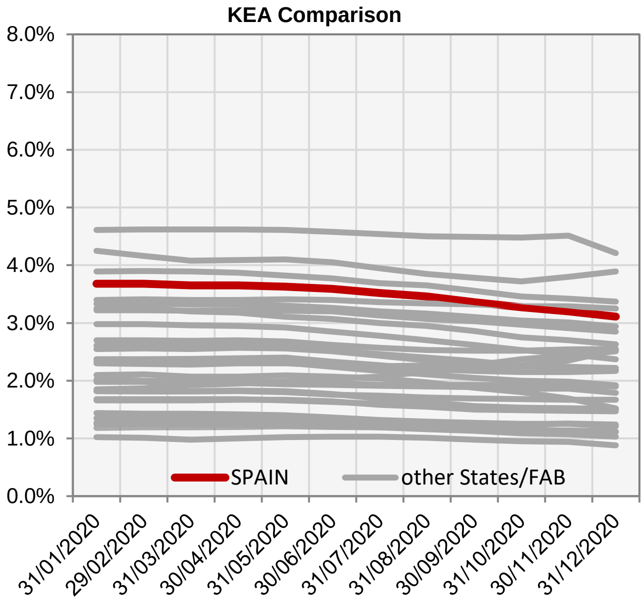
Four out of five EoSM components of FERRONATS meet already the 2024 target level. Only the component "Safety Risk Management" is below 2024 target level, at level C. Improvements in safety risk management are still expected during RP3 to achieve 2024 targets.

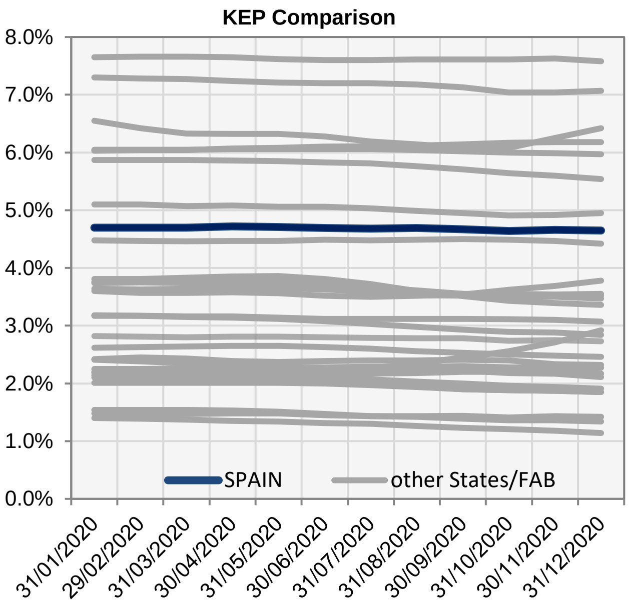
KEA	2020	2021	2022	2023	2024
Provisional target	3.23%				
Actual performance	3.11%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	3.68%	3.68%	3.65%	3.65%	3.63%	3.59%	3.52%	3.46%	3.36%	3.27%	3.20%	3.11%
KEP	4.70%	4.70%	4.70%	4.72%	4.71%	4.69%	4.68%	4.69%	4.67%	4.64%	4.66%	4.65%
KES	4.55%	4.55%	4.55%	4.57%	4.56%	4.53%	4.53%	4.53%	4.51%	4.49%	4.50%	4.50%





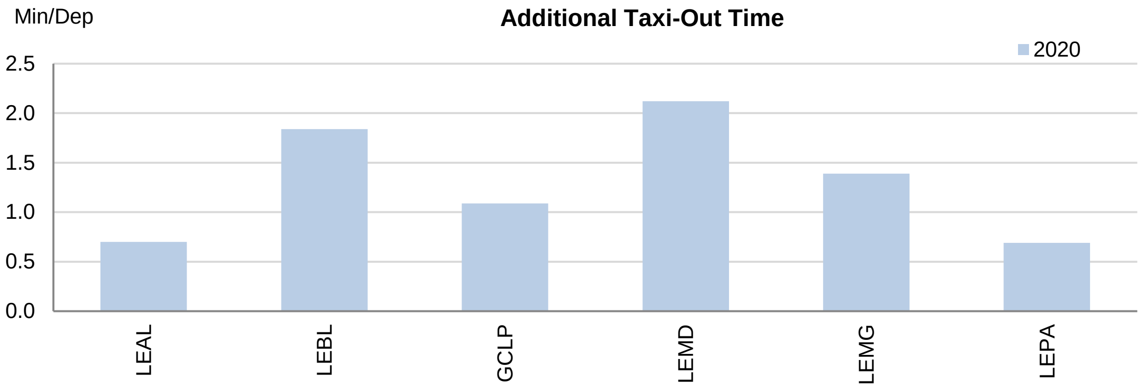
The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Spain includes seven airports under RP3 monitoring. However in accordance with IR (EU) 2019/317 and the traffic figures, Ibiza is not monitored for additional taxi-out and ASMA times.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly where required and the monitoring of all environment indicators can be performed.
Traffic at the ensemble of Spanish airports under monitoring decreased by 61% in 2020 with respect to 2019, with the biggest reduction observed at Palma (-65%) and the lowest at Gran Canaria (-48%)
Alongside the reduction in traffic, additional times both in the taxi-out and the approach phase drastically decreased as of April 2020, resulting in times less than half of those observed in 2019.
The share of CDO flights is in general higher than the overall RP3 value in 2020.

The Spanish NSA reports that all these indicators are being analysed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

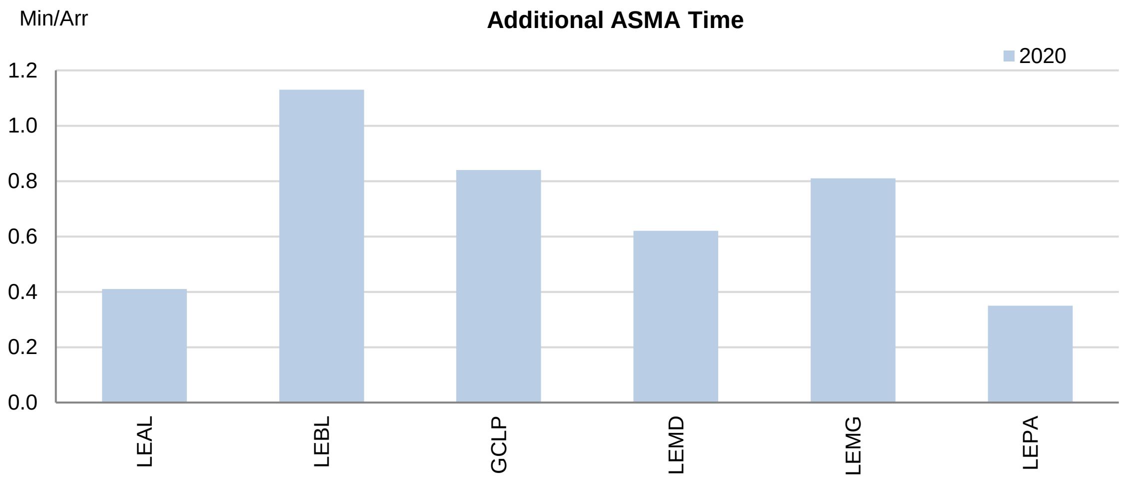
2. Additional Taxi-Out Time



The additional taxi out time at national level has decreased in 2020 by 53% in relation to the value of 2019 (not taking Alicante into account as this airport was not monitored in 2019).
The drastic drop in traffic had a clear impact in the additional taxi-out times, and most of these airports averaged zero or practically zero minutes of additional time during April, May and June. With the partial recovery of the traffic in the Summer period, these times increased slightly and from July to December they averaged all together 0.85 min/dep.
The most important reduction in the annual values with respect to 2019 was observed at Palma (LEPA; 2019: 2.16 min/dep.; 2020: 0.69 min/dep.)

According to the Spanish monitoring report: *ENAIRE has implemented the D-DCL at the Airports of Palma, Barcelona, Malaga and Madrid, which automatizes departure authorizations, avoiding the saturation of the frequency that occurs in large airports and increasing efficiency. There is work in progress regarding the improvement of A-CDM in Madrid and Barcelona.*

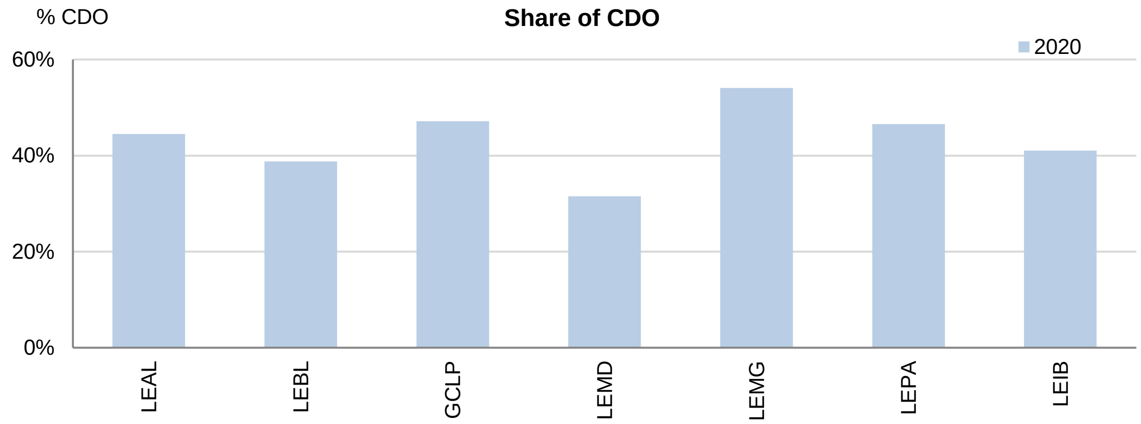
3. Additional ASMA Time



The additional time in terminal area at national level has decreased by 52% in relation to the value of 2019 (not taking Alicante into account as this airport was not monitored in 2019).
The evolution of this indicator is very similar to the additional taxi-out times, and in April-June most of these airports had zero or practically zero additional ASMA times. Although with the Summer these times increased again, the only averaged all together 0.42 min/arr in the second half of the year.
Once more the most important reduction in the annual values with respect to 2019 was observed at Palma (LEPA; 2019: 1.31 min/arr.; 2020: 0.35 min/arr.), with -73% additional ASMA times.

According to the Spanish monitoring report: *In recent years, restructuring projects have been implemented in some TMAs that have made it possible to streamline and optimise the flow of air traffic, reducing additional time in the ASMA: Barcelona 2018, Madrid (South configuration) 2019. More restructuring projects are planned for the coming years in the main TMAs in Spain:*
- PBN SIDs, STARs and ILS & RNP APCH in Madrid TMA
- PBN SIDs in Barcelona TMA
- PBN SIDs, ILS & RNP APCH in Palma TMA
- PBN STARs in Malaga.

4. Share of arrivals applying CDO



Only Madrid (LEMD: 31.5%) has its share of CDO flights below the overall RP3 value in 2020 (32.5%). All other airports have shares of CDO flights above the overall RP3 value in 2020, ranging from 38.8% to 54.1%.
According to the Spanish monitoring report: *Currently, Alicante, Madrid, Gran Canaria, Málaga and Palma airports have implemented continuous descent procedures (CDA) for night-time approaches. The conditions of use of continuous descent procedures mean that the use of this type of procedure is not always compatible with the techniques used when it is necessary to manage medium/high traffic demands at airports/TMAs. Therefore, the authorisation of these procedures must be compatible with the airport's operations in order to meet the demand without establishing restrictions. In the long term, there are plans to modify the structure of the CDA procedures currently published at these airports and to transfer to the arrival procedures section of the AIP the information to proceed with the continuous descent from some point of the STARs to the IAF, to some point of the intermediate approach or to the IF, thus maximising the use of these operations. This is already in implemented at Ibiza and Barcelona Airport.*

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Alicante-LEAL	0.7					0.41					45%				
Barcelona-LEBL	1.84					1.13					39%				
Gran Canaria-GCLP	1.09					0.84					47%				
Madrid - Barajas-LEMD	2.12					0.62					32%				
Málaga-LEMG	1.39					0.81					54%				
Palma de Mallorca-LEPA	0.69					0.35					47%				
Ibiza-LEIB	-					-					41%				

Update on Military dimension of the plan

Environment: Civil-Military coordination regarding Flexible Use of Airspace is on progress at strategic level established within the specific working group called UPEA inside CIDETMA (previous CIDEFO). Dissemination of progress on FUA to civil operators is considered an enabler to achieve Flight Plans using more efficient routes through the Civil Use of Release Airspace (CURA).

AMC manual revision was finished and the new version is in force.

Capacity: Based on the Principles of FUA, additional capacity to the planned one could be provided once the airspace used for military operations and training is released.

Military - related measures implemented or planned to improve capacity

Environment: Spanish Air Force has been active participant in the general meetings to implement the Spanish Free Route Airspace Programme and an specific group composed by ENAIRE and Spanish Air Force was created in order to further improve the coordination for the implementation of FRA, with a special focus in ASM related matters. Furthermore, a close coordination work with the Network Manager is ongoing.

Several meetings have been held and discussions are ongoing in order to implement new single CDR category and to revise airspace structures (Reserved areas and to re-align ATS routes). At national level, there are some improvements at strategic level, including the definition of a SSC transition plan. SSC (Single Category CDR) transition plan has the objective of using only one type of Conditional Route improving ASM procedures and optimizing the use of the airspace.

Capacity: Establishment of SCC and the FUA Pilot Project. SCC transition plan is explained above. Regarding the "FUA Pilot Project" is a project with civil-military coordination to improve the use of the airspace and associated procedures, from both points of view, civil and military, starting from some specific Dangerous areas and working in Collaborative Decision Making processes.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Spain	53%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Barcelona	N/A				
Canarias	30%				
Madrid	N/A				
Palma	N/A				
Sevilla	N/A				

Initiatives implemented or planned to improve PI#6

Several meetings have been held and discussions are ongoing in order to implement the Single CDR Category, to revise restricted areas and to re-align ATS routes, including the definition of a SSC transition plan.

At national level, there are some improvements at strategic level, including the monitoring of the new mechanisms and the Pilot Project for FUA.

The particularities of this indicator are being analyzed in our airspace since there are no monthly data published at SES portal and, at the moment, they are annually provided by the Spanish Air Force NSA. This PI is being analyzed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

It is not possible to identify this information independently per each ACC in the Peninsula because there are some areas that are in the airspace of more that one ACC. Statistics are available per Area. The data for the Peninsula is the data for Spain (above) minus the data for Canarias ACC. Data for effective use of reserved airspace in ACC is accurate as all the areas in this airspace are within the boundaries of the ACC.

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Spain	95%				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Barcelona	N/A				
Canarias	N/A				
Madrid	N/A				
Palma	N/A				
Sevilla	N/A				

Initiatives implemented or planned to improve PI#7

Spain is working on the transition to single CDR category.

Note: In our opinion, the ratio of planning via available airspace structures should be calculated as the number of aircraft filing flight plans via reserved or segregated airspace and CDRs divided by the number of aircraft that could have planned through those airspace structures as the Annex I - Section 1 - Point 2.2.d of Regulation 2019/317 suggests. Therefore the value of the ratio should be 95%.

The particularities of this indicator in our airspace are being analyzed since there are no monthly data published at SES portal and, at the moment, they are only provided annually, at national level, by the ANSP. This PI is being analyzed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

No data is available per ACC

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Spain	98%				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Barcelona	N/A				
Canarias	N/A				
Madrid	N/A				
Palma	N/A				
Sevilla	N/A				

Initiatives implemented or planned to improve PI#8

Spain is working on the transition to single CDR category.

Note: In our opinion, the ratio of using available airspace structures should be calculated as the number of aircraft flying via reserved or segregated airspace and CDRs divided by the number of aircraft that could have planned through those airspace structures as the Annex I - Section 1 - Point 2.2.e of Regulation 2019/317 suggests. Therefore the value of the ratio should be 102%.

The particularities of this indicator in our airspace are being analyzed since there are no monthly data published at SES portal and, at the moment, they are only provided annually, at national level, by the ANSP. This PI is being analyzed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

No data available per ACC.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.47					The figure provided here is consistent with all national reports and is the PRB monitored result following NM post-operations adjustment.
Actual performance	0.40					

NSA's assessment of capacity performance

The performance in the capacity KPA was below reference values in 2020 for Spain. It should be taken into account that those figures were achieved with a substantial reduction of traffic, but also with the goal of safety, ensuring business continuity and generating the minimum delay, in exceptional circumstances. To achieve that, several measures had to be implemented and adapted to the changing evolution of the pandemic:

• protect the essential operational staff from COVID19 in all places of work to reduce the active cases and spread of the disease among the staff
• keep the level of training and expertise for operational staff, and
• design mitigation measures for the recovery of the traffic.

The effect of the Covid-19 pandemic has had repercussions all over the world, but within Europe, Spain was one of the most affected countries . The Covid-19 explosion started at the beginning of March and, among the countries that usually present delays, Spain was one of the first to implement very restrictive measures. The objectives of these measures were, on the one hand, trying to control the increase in infections and, at the same time, being able to guarantee the control service. This caused great minutes of delay in our ACCs due to O-Other Covid cause.
The EACCC was activated by the NM due to the evolution of the pandemic in Europe at least in pre-alert phase since 31 January and in crisis phase since 19 March. Spain declared the state of alarm the 14 March.
An in-depth analysis has been carried out [by Spain] of what happened in those weeks of March in relation to the causes of delays and the factors that influenced them. A total of 259.585 en-route delay minutes were generated due to the exceptional situation of Covid-19 between 12 and 21 March.
After the analysis made, it was concluded that the minutes of delay due to the cause O-Other Covid-19 should be considered as generated in an exceptional event and therefore not to be counted for the ERD indicator as the Annex I - Section 2 - Point 3.1.a.ii of Regulation 2019/317 defines. Taking this circumstance into account, ERD in 2020 has a value of 0.09, instead of the 0.40 pre-filled.
This conclusion was consulted in the framework of the post-ops procedure for consideration before the final 2020 data were finalised and published in April 2021, but we were referred to the annual monitoring framework for consideration.

Monitoring process for capacity performance

The AESA Monitoring Process has evolved to monitor this indicator on a monthly basis taking into account the different causes of delay, since the incentive system implemented for RP3 considers a mechanism modulated by causes of delay. The evolution of the attributable and non-attributable delay causes is monitored in order to apply the incentive mechanism and to identify the reasons in the event of non-compliance.
The alert mechanism continues to be active to warn, months before the end of the year, of possible non-compliance.

Capacity Planning

The NOP 2020 Recovery Plan was the NOP structured plan adapted to the COVID-19 crisis, updated every week, initially covering an outlook of four weeks and later reconverted into the NOP Rolling Seasonal Plan covering an outlook of six weeks.

Every week ENAIRE updates data to the plan (planned sector openings, maximum possible sector openings, sector capacity reductions if any, availability of support to operations staff, additional information -e.g. other constraints to be highlighted- and special events and major projects). The plan is a living document regularly updated and published by NM in order to be adapted to the changed conditions of the Air Navigation Service.

Due to the exceptional situation that the whole world began experiencing in 2020 with the COVID pandemic, the projects planned for 2020 in the NOP for Spain were reviewed and adapted to the new scenario. The main projects:

• ALL ACCs: improved ATFCM, in line with AF4 of PCP; optimized sector configurations and sector capacities, net increase of ATCOs -at a lower rate than planned due to COVID19-.
• PALMA ACC: Palma Final Approach Improvements (2021).
• CANARIAS ACC: Improvements of NW (2021) and Split NE Sector, 11th sector (sector cluster) (2021).

The new scenario is focused on service recovery and to facilitate users the return to normality, always prioritizing safety and the minimum delay.

ATCO in OPS (FTE)

Barcelona ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	341	370					
Actual	339	323					

Madrid ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	423	448					
Actual	425	415					

Palma ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	139	148					
Actual	130	137					

Sevilla ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	129	147					
Actual	140	131					

Canarias ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	156	163					
Actual	156	151					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

The PRB notes the reference by Spain to the activation of the European Aviation Crisis Coordination Cell (EACCC) and 'exceptional events'. The PRB also notes that neither the EACCC, nor the Network Manager, have published any information about ATFM delays to be considered as 'exceptional events'. The figure provided here is consistent with all national reports and is the PRB monitored result following all NM post-operations adjustment.

Spain (continental) experienced a traffic reduction of 61% from 2019 levels, to 780k flights. The Canarias FIR experienced a traffic reduction of 52% from 2019 levels, to 173k flights.

The traffic level was accommodated with 338k minutes of en route ATFM delays to airspace users. 77% of delays (260k minutes) were attributed to 'ATC other' in March 2020 , 20% of delays (67k minutes) were attributed to ATC capacity between January and March 2020.

En route Capacity Incentive Scheme

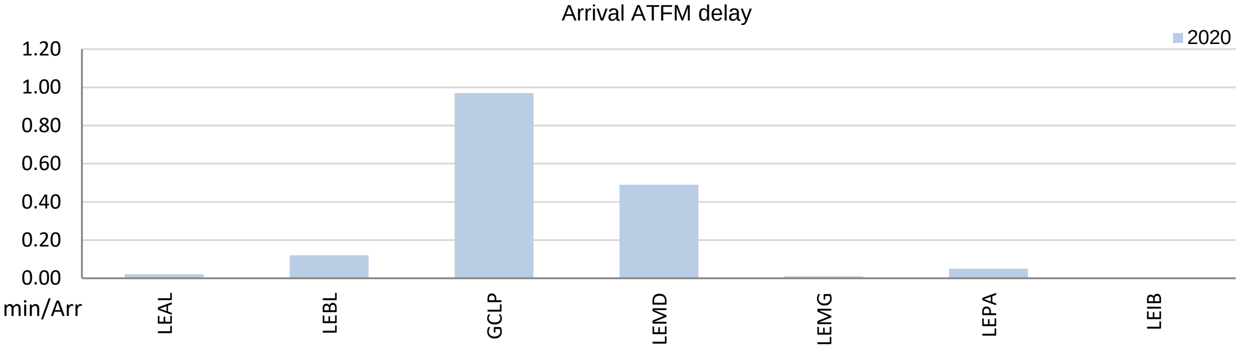
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.36					Only C, R, S, T, M P causes are considered for the incentive scheme. No breakdown of CRSTMP values were provided in the monitoring report.
Deadband +/-						
Actual						

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Spain includes seven airports under RP3 monitoring. However in accordance with IR (EU) 2019/317 and the traffic figures, Ibiza is not monitored for pre-departure delays.
The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly implemented where required. Nevertheless, the quality of the reporting from all the Spanish airports does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at the ensemble of Spanish airports under monitoring decreased by 61% in 2020 with respect to 2019, with the biggest reduction observed at Palma (-65%) and the lowest at Gran Canaria (-48%)
National arrival ATFM delay decreased by 71% with respect to 2019 following the drop in traffic, although Gran Canaria observed an increase with respect to the previous year. The national slot adherence was 95.3%.

2. Arrival ATFM Delay

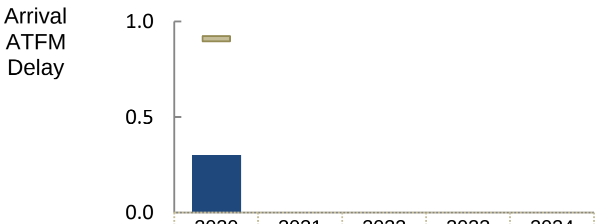


The national average arrival ATFM delay at Spanish airports in 2020 was 0.30 min/arr, significantly lower than the 1.02 min/arr in 2019 (-71%)
All delays took place in the first trimester of the year, except for minor aerodrome capacity related delays in Gran Canaria in December.
The highest average ATFM delay per arrival was recorded at Gran Canaria (GCLP; 2019: 0.14 min/arr; 2020: 0.97 min/arr), mainly due to weather delays in February and delays attributed to "Other" in March.
At Madrid (LEMD; 2019: 1.29 min/arr; 2020: 0.49 min/arr) delays were attributed to weather (69%), ATC capacity (23%) and Other (8%)
At Barcelona (LEBL; 2019: 1.33 min/arr; 2020: 0.12 min/arr) delays in the first trimester were attributed mainly to weather (83%) and environmental issues (12%)
Palma (LEPA; 2019: 1.08 min/arr; 2020: 0.05 min/arr) recorded delays only in February (weather) and March (Other)

According to the Spanish monitoring report: A*lthough the TAD target has been largely met at national level, the crisis of Covid-19 had also an impact at certain airports, causing arrival delays. GCLP was the most significantly affected since in March, it was in the middle of the high season with many tourists in the Canary Islands. LEMD and LEPA also recorded delays due to O-Other Covid-19 but this did not have a major impact on the indicator.*
As explained in tab 2.3.1.A. KPI#2 the effects of COVID-19 crisis has been also analysed for TAD KPI.
A detailed analysis of what happened in those weeks of March in relation to the causes of delay and the factors that influenced them was carried out. A total of 15.383 minutes of arrival delays were generated due to the exceptional Covid-19 situation between 14 and 16 March, the weekend when the state of alarm was declared in Spain.
After the analysis made, it was concluded that the delay minutes due to cause O-Other Covid-19 should be considered as generated in an exceptional event as the Annex I - Section 2 - Point 3.1.a.ii of Regulation 2019/317 defines and therefore not counted for TAD indicator. In that case, TAD in 2020 has a value of 0.24 instead of the 0.30 pre-filled.

The PRB notes the reference by Spain to the activation of the European Aviation Crisis Coordination Cell (EACCC) and ‘exceptional events’. The PRB also notes that neither the EACCC, nor the Network Manager, have published any information about ATFM delays to be considered as ‘exceptional events’. The figure provided here is consistent with all national reports and is the PRB monitored result following all NM post-operations adjustment.

3. Arrival ATFM Delay – National Target and Incentive Scheme

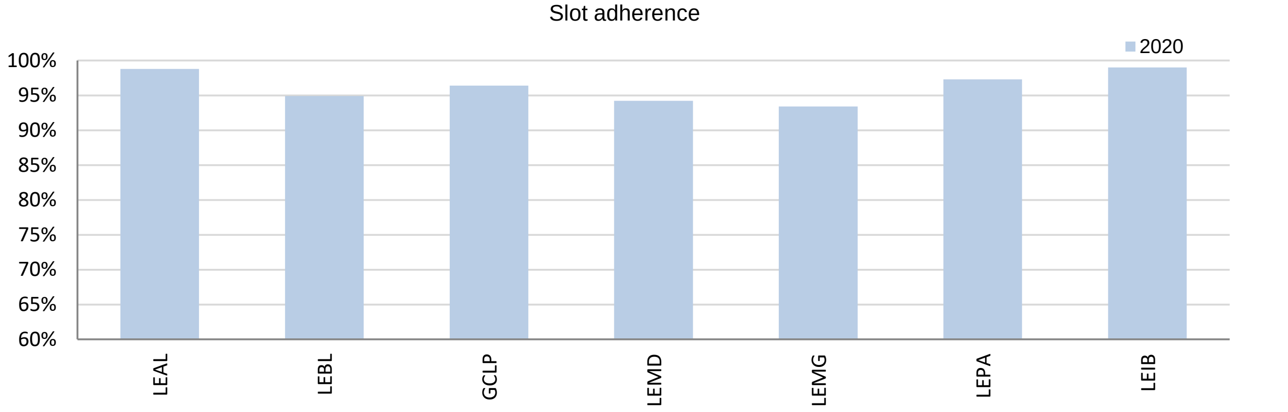


	2020	2021	2022	2023	2024
Actual	0.30				
Target	0.91				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, the share of regulated departures from Spanish airports virtually disappeared as of April. The annual figures are therefore driven by the performance in the first trimester.
All Spanish airports showed adherence above 90% and the national average was 95.3%. With regard to the 4.7% of flights that did not adhere, 3.2% was early and 1.5% was late.

The Spanish monitoring reports adds: *As 2020 is the first year of the third reference period, and the result at a national level includes for the first time a total of 7 airports, it is not directly comparable with the value reported to the European Commission the previous year, in which the result at the national level included the adherence to slots only of the 5 main airports. However, the calculated result for 2019 (PRU data) based on 7 airports would reach a 96.2% of adherence to slot, in line with that obtained in 2020 (95.3%). Both results are well above the value of 80% set in Commission Regulation (EU) No 255/2010, so ENAIRE does not think that it's necessary to establish specific improvement measures.*
This PI is being analysed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at all 6 Spanish airports subject to monitoring of this indicator.

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The high share of unidentified delay reported by 4 of these airports is a long standing issue, only worsened by the special traffic composition since April 2020. Gran Canaria and Alicante had a proper reporting prior to the pandemic.

The Spanish monitoring report includes some analysis on the monthly values that could be calculated:

-GCLP only has monthly data for 2 months, with a resulting value of 0.32, similar but somewhat lower than in previous years. In other years, all monthly data were available.
-LEAL has data for 7 months, with a resultant value of 0.26, lower than in previous years, which was around 0.36-0.34.
-LEBL only has data for one month, its value is 0.03. This is much lower than in the previous two years, which was above 1.2. The availability of monthly data has been getting worse every year since 2017.
-LEMD and LEPA do not have any data in 2020, the latest monthly data is from Jan-2019.
-LEMG has 3-month data available, with a resulting value of 0.45, somewhat lower than the previous 3 years which was around 0.5. The lack of data started in 2019 and has increased in 2020.

At the moment, AESA is studying the particularities of this indicator in our airspace. Data are only available at SES portal, so AESA will investigate the lack of data at some airports during certain months.
This PI is being analysed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Spanish airports in 2020 was between 5.44 min/dep for Palma (LEPA), which is the 3rd lowest among the RP3 monitored airports, and 11.33 min/dep. for Malaga (LEMG).
The higher delays per flight were observed in the first trimester of the year, except for Madrid where the highest delays per flight took place in April and May, due to the lower traffic and extraordinary circumstances. Malaga also registered very high delay per flight in the second trimester.

According to the Spanish monitoring report:
2020 is the first year in which this PI has been monitored, so it is not possible to compare the results with previous years. In addition, these data are only available annually, so AESA has not been able to carry out a monitoring process. At the moment, AESA is studying the particularities of this indicator in our airspace. This PI is being analysed to develop a monitoring (where it is possible) not only annually but, at least, twice a year to evaluate the evolution of the indicators. If significant deviations are found, the possible causes will be analysed by contacting the relevant stakeholder.

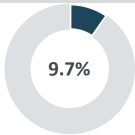
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

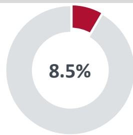
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Alicante-LEAL	0.02					98.8%					n/a					9.03				
Barcelona-LEBL	0.12					94.9%					n/a					8.74				
Gran Canaria-GCLP	0.97					96.4%					n/a					11.30				
Madrid - Barajas-LEMD	0.49					94.2%					n/a					9.52				
Málaga-LEMG	0.01					93.4%					n/a					11.33				
Palma de Mallorca-LEPA	0.05					97.3%					n/a					5.44				
Ibiza-LEIB	0					99.0%					-					-				

Contextual economic information: en-route air navigation services

FAB:	SW FAB
Main ATSP:	ENAIRE
National currency:	EUR

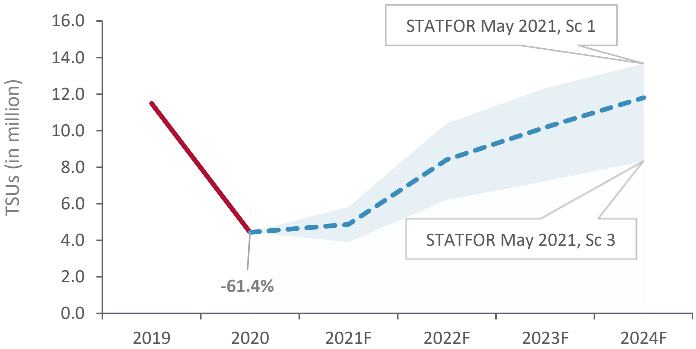


Spain Continental ECZ share in European ANS actual costs in 2020

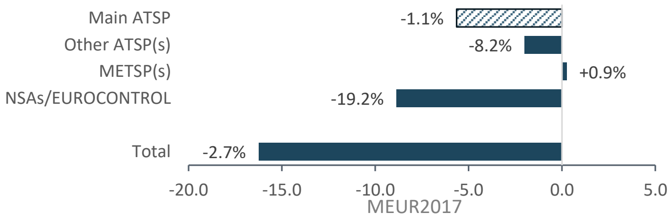


Spain Continental ECZ share in European ANS actual TSUs in 2020

Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	600 100 515	614 707 986	598 351 294	-0.3%	-2.7%
Inflation %	0.0%	0.8%	0.0%	0.0 p.p.	-0.8 p.p.
Real en-route costs (EUR2017)	588 945 442	603 375 571	587 141 309	-0.3%	-2.7%
Total en-route Service Units (TSUs)	4 369 000	11 488 296	4 436 942	+1.6%	-61.4%
Real en-route unit cost per Service Unit (EUR2017)	**134.80**	**52.52**	**132.33**	**-1.8%**	**+152.0%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were slightly lower (-1.8%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of slightly higher (+1.6%) actual TSUs and mostly stable (-0.3%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-61.4%) is expected to be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Spain Continental ECZ rose substantially (+152.0% in real terms) mainly due to the exceptional -61.4% traffic reduction. In the meantime, en-route costs decreased (-2.7%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: ENAIRE - the main ATSP (-1.1%), the other ATSPs operating in the CZ (-8.2%), the MET service provider (+0.9%) and the NSAs/EUROCONTROL (-19.2%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of ENAIRE en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	341 561 728	360 993 648	346 963 238	+1.6%	-3.9%
Other operating costs	46 844 110	48 540 387	46 009 484	-1.8%	-5.2%
Depreciation	65 556 103	68 471 074	66 644 059	+1.7%	-2.7%
Cost of capital	25 021 890	23 860 785	23 073 453	-7.8%	-3.3%
Exceptional costs	17 390 770	5 785 853	17 405 649	+0.1%	+200.8%
VFR exempted flights	0	-1 912 583	0		-100.0%
Total ENAIRE en-route costs	**496 374 602**	**505 739 164**	**500 095 884**	**+0.7%**	**-1.1%**

Analysis at main ATSP level

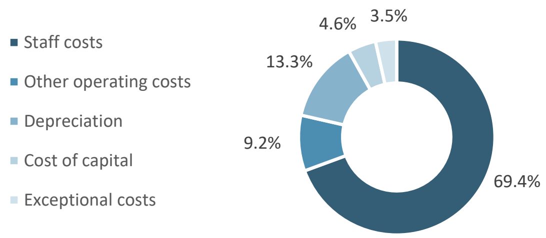
In 2020, ENAIRE actual en-route costs were slightly higher (+0.7%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, ENAIRE actual 2020 en-route costs are slightly lower (-1.1%, or -5.6 MEUR2017) compared to those reported in 2019. This results from the combination of:

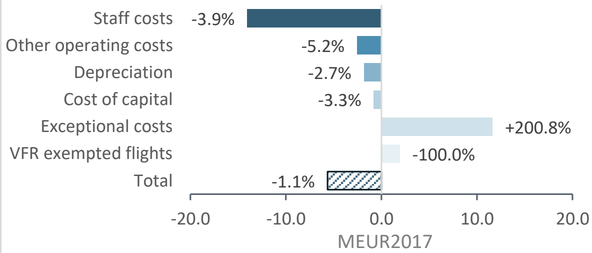
- lower staff costs (-3.9%, or -14.0 MEUR2017);
- lower other operating costs (-5.2%, or -2.5 MEUR2017);
- lower depreciation costs (-2.7%, or -1.8 MEUR2017);
- lower cost of capital (-3.3%, or -0.8 MEUR2017);
- significantly higher exceptional costs (+200.8%, or +11.6 MEUR2017);
- no deduction for VFR exempted flights in 2020.

ENAIRE implemented exceptional measures including suspension of new staff recruitments, increase in number of ATCOs in "active reserve", containment of salary increases, reduction in variable salary components, overtime and training expenses. Exceptional measures also affected maintenance and repair services, supplies, external services, as well as expenses relating to institutional and public relations events and marketing. Lower return on equity, average interest on debts and share of financing through equity resulted in a lower cost of capital.

ENAIRE actual 2020 en-route costs by nature

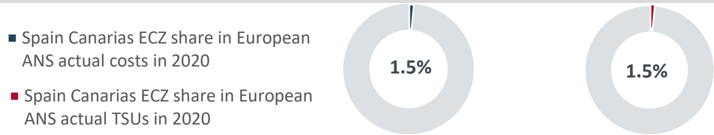


Actual costs variation by nature between 2019 and 2020

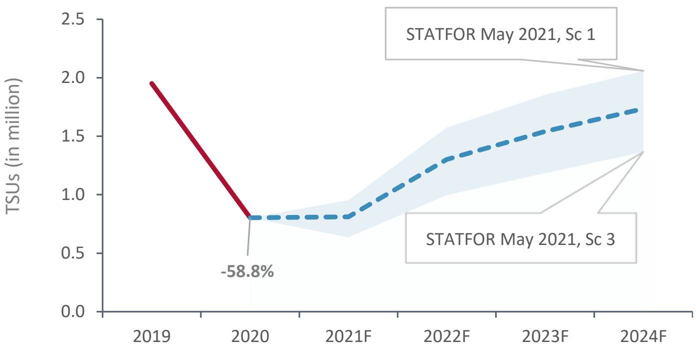


Contextual economic information: en-route air navigation services

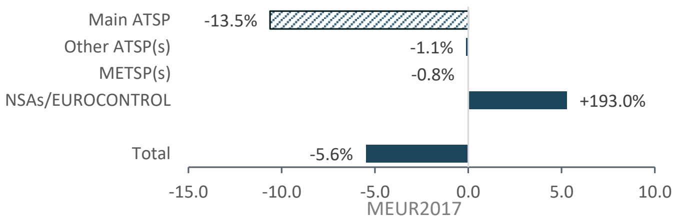
FAB:	SW FAB
Main ATSP:	ENAIRE
National currency:	EUR



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal EUR)	93 849 419	99 701 385	94 071 894	+0.2%	-5.6%
Inflation %	0.0%	0.8%	0.0%	0.0 p.p.	-0.8 p.p.
Real en-route costs (EUR2017)	92 128 041	97 804 160	92 318 035	+0.2%	-5.6%
Total en-route Service Units (TSUs)	762 000	1 951 121	802 932	+5.4%	-58.8%
Real en-route unit cost per Service Unit (EUR2017)	**120.90**	**50.13**	**114.98**	**-4.9%**	**+129.4%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-4.9%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+5.4%) actual TSUs and mostly stable (+0.2%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-58.8%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Spain Canarias ECZ rose substantially (+129.4% in real terms) mainly due to the exceptional -58.8% traffic reduction. In the meantime, en-route costs decreased (-5.6%) in real terms.

The lower en-route costs at CZ level are a combination of the following changes observed for the different entities: ENAIRE - the main ATSP (-13.5%), the other ATSPs operating in the CZ (-1.1%), the MET service provider (-0.8%) and the NSAs/EUROCONTROL (+193.0%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of ENAIRE en-route ANS costs (real EUR2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	47 287 857	55 098 509	49 191 461	+4.0%	-10.7%
Other operating costs	6 289 120	6 883 349	5 865 914	-6.7%	-14.8%
Depreciation	8 464 890	12 340 156	8 509 867	+0.5%	-31.0%
Cost of capital	3 599 652	4 009 897	2 947 915	-18.1%	-26.5%
Exceptional costs	1 519 526	517 516	1 536 083	+1.1%	+196.8%
VFR exempted flights	0	-172 310	0		-100.0%
Total ENAIRE en-route costs	**67 161 045**	**78 677 117**	**68 051 239**	**+1.3%**	**-13.5%**

Analysis at main ATSP level

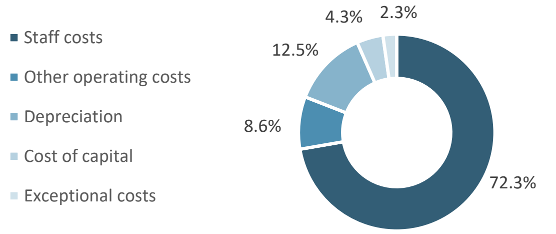
In 2020, ENAIRE actual en-route costs were slightly higher (+1.3%) compared to those reported in the initial plans submitted in December 2020.

As indicated in the text box above, ENAIRE actual 2020 en-route costs are significantly lower (-13.5%, or -10.6 MEUR2017) compared to those reported in 2019. This results from the combination of:

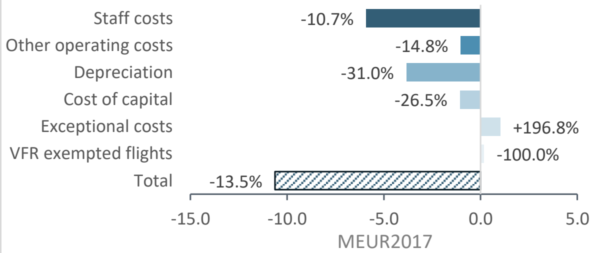
- significantly lower staff costs (-10.7%, or -5.9 MEUR2017);
- significantly lower other operating costs (-14.8%, or -1.0 MEUR2017);
- significantly lower depreciation costs (-31.0%, or -3.8 MEUR2017);
- significantly lower cost of capital (-26.5%, or -1.1 MEUR2017);
- significantly higher exceptional costs (+196.8%, or +1.0 MEUR2017);
- no deduction for VFR exempted flights in 2020.

ENAIRE implemented exceptional measures including suspension of new staff recruitments, increase in number of ATCOs in "active reserve", containment of salary increases, reduction in variable salary components, overtime and training expenses. Exceptional measures also affected maintenance and repair services, supplies, external services, as well as expenses relating to institutional and public relations events and marketing. Lower return on equity, average interest on debts and share of financing through equity resulted in a lower cost of capital.

ENAIRE actual 2020 en-route costs by nature

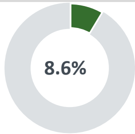


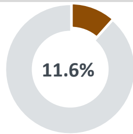
Actual costs variation by nature between 2019 and 2020



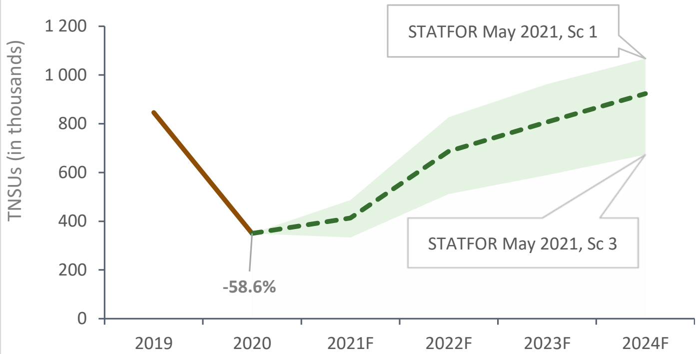
Contextual economic information: terminal air navigation services

Main ATSP:	ENAIRE
National currency:	EUR
Number of airports in TCZ:	7

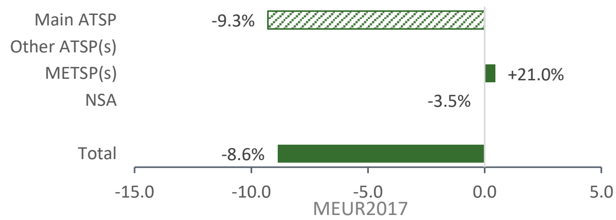




Actual data from June 2021 Reporting Tables (see also Note 1)	2019A	2020A	2020A vs 2019A
Terminal costs (nominal EUR)	105 052 170	95 964 862	-8.7%
Inflation %	0.8%	0.0%	-0.8 p.p.
Real terminal costs (EUR2017)	102 729 570	93 857 401	-8.6%
Total Terminal Navigation Service Units	846 003	349 849	-58.6%
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**121.43**	**268.28**	**+120.9%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Spain TCZ comprises 7 airports. See also **Note 1** at the end of this report.

Between 2019 and 2020, the terminal unit costs of Spain TCZ rose substantially (+120.9% in real terms) mainly due to the exceptional -58.6% traffic reduction. In the meantime, terminal costs decreased (-8.6%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-58.6%) is expected to be recovered by 2024.

The lower terminal costs at TCZ level are a combination of the following changes observed for the different entities: ENAIRE - the main ATSP (-9.3%), the MET service provider (+21.0%) and the NSA (-3.5%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of ENAIRE Terminal ANS costs in TCZ (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	85 185 506	74 588 955	-12.4%
Other operating costs	4 848 865	4 760 732	-1.8%
Depreciation	6 593 811	6 194 736	-6.1%
Cost of capital	1 936 736	1 837 143	-5.1%
Exceptional costs	1 008 115	2 903 953	+188.1%
VFR exempted flights	0	0	
Total ENAIRE terminal costs in TCZ	**99 573 032**	**90 285 518**	**-9.3%**

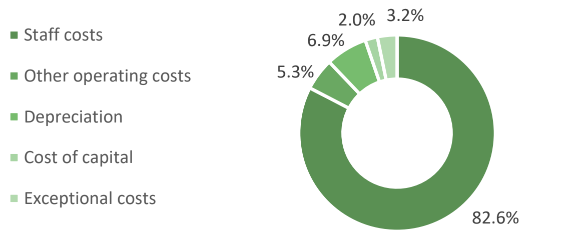
Analysis at main ATSP level

As indicated in the text box above, ENAIRE actual 2020 terminal costs in TCZ are lower (-9.3%, or -9.3 MEUR2017) than those reported in 2019, see also **Note 1** at the end of this report. This results from the combination of:

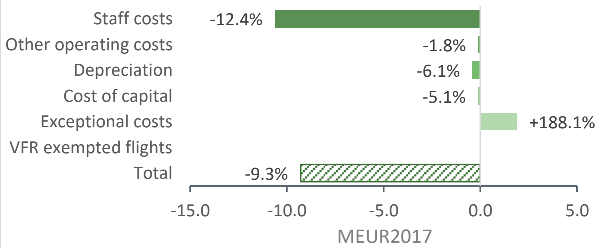
- significantly lower staff costs (-12.4%, or -10.6 MEUR2017);
- slightly lower other operating costs (-1.8%, or -0.1 MEUR2017);
- lower depreciation costs (-6.1%, or -0.4 MEUR2017);
- lower cost of capital (-5.1%, or -0.1 MEUR2017);
- significantly higher exceptional costs (+188.1%, or +1.9 MEUR2017).

ENAIRE implemented exceptional measures including suspension of new staff recruitments, increase in number of ATCOs in "active reserve", containment of salary increases, reduction in variable salary components, overtime and training expenses. Exceptional measures also affected maintenance and repair services, supplies, external services, as well as expenses relating to institutional and public relations events and marketing. Lower return on equity, average interest on debts and share of financing through equity resulted in a lower cost of capital.

ENAIRE actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (EUR2017)	701 179 731	679 459 343	-3.1%
Real terminal costs (EUR2017) (see Note 1)	102 729 570	93 857 401	-8.6%
Real gate-to-gate costs (EUR2017)	803 909 301	773 316 744	-3.8%
En-route share in gate-to-gate costs (%)	**87.2%**	**87.9%**	**+0.6 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Spain decreased (-3.8%, or -30.6 MEUR2017) in real terms. This is a combination of a reduction (-3.1%, or -21.7 MEUR2017) in en-route and a decrease (-8.6%, or -8.9 MEUR2017) in terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (87.9%) slightly rose (+0.6 p.p.) compared to the figure reported in 2019 (87.2%).

Breakdown of ENAIRE gate-to-gate ANS costs (real EUR2017)	2019A	2020A	2020A vs 2019A
Staff	501 277 663	470 743 654	-6.1%
Other operating costs	60 272 601	56 636 130	-6.0%
Depreciation	87 405 041	81 348 662	-6.9%
Cost of capital	29 807 418	27 858 511	-6.5%
Exceptional costs	7 311 484	21 845 685	+198.8%
VFR exempted flights	-2 084 893	0	-100.0%
Total ENAIRE gate-to-gate costs	**683 989 313**	**658 432 641**	**-3.7%**

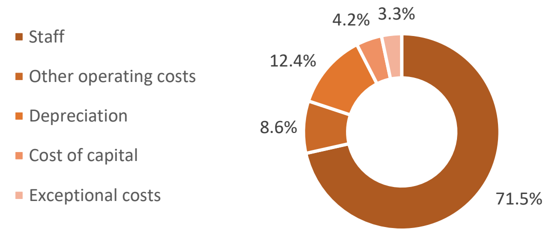
Analysis at main ATSP level

ENAIRE actual 2020 gate-to-gate costs are lower (-3.7%, or -25.6 MEUR2017) than those reported in 2019. This results from the combination of:

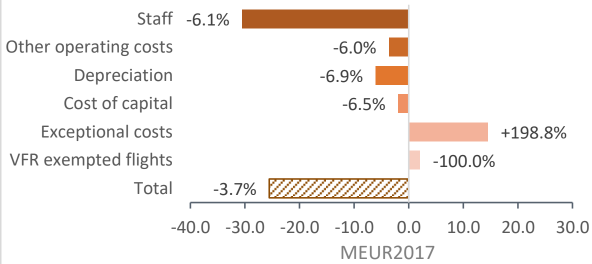
- lower staff costs (-6.1%, or -30.5 MEUR2017);
- lower other operating costs (-6.0%, or -3.6 MEUR2017);
- lower depreciation costs (-6.9%, or -6.1 MEUR2017);
- lower cost of capital (-6.5%, or -1.9 MEUR2017);
- significantly higher exceptional costs (+198.8%, or +14.5 MEUR2017);
- no deduction for VFR exempted flights in 2020.

Details on the drivers behind the changes observed above are provided in the respective analyses of ENAIRE at en-route and terminal charging zone level.

ENAIRE actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Spain

Note 1: Change in scope of Spain Terminal Charging Zone between RP2 and RP3

Spain TCZ changes its scope from 5 airports in RP2 to 7 airports in RP3 (including Alicante and Ibiza airports). For this reason, the scope of 2019 figures provided in the terminal and gate-to-gate analysis at the Charging Zone and main ATSP levels differs from those in 2020.

If these two airports were included 2019 figures, Spain TCZ would record a decrease in terminal costs in real terms of -13.0% instead of -8.6% as currently presented.

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Annual Monitoring Report 2020

Local level view

Sweden

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Effectiveness of Safety Management

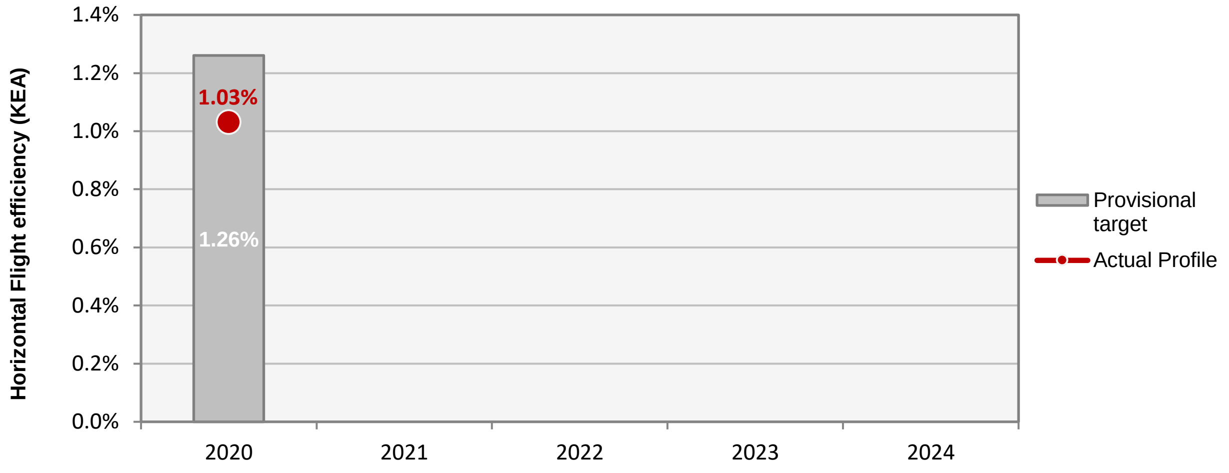
	Score	Safety Culture	Safety Policy and Objectives	Safety Risk Management	Safety Assurance	Safety Promotion
LFV	86	C	C	D	C	C

Note: EoSM questionnaire has been updated in RP3 using CANSO Standard of Excellence as the basis, maturity levels of study areas and calculation of the score have been updated too. A direct comparison with maturity levels and scoring of EoSM used RP2 is not advisable.

Observations

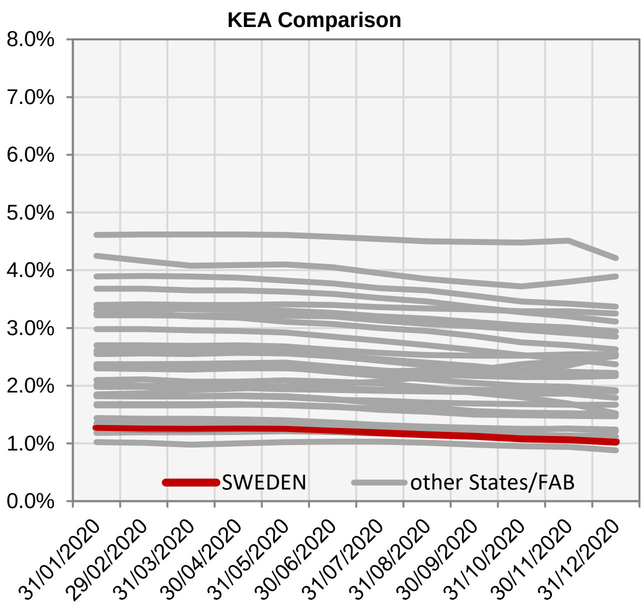
All five EoSM components of the ANSP meet already the 2024 target level.

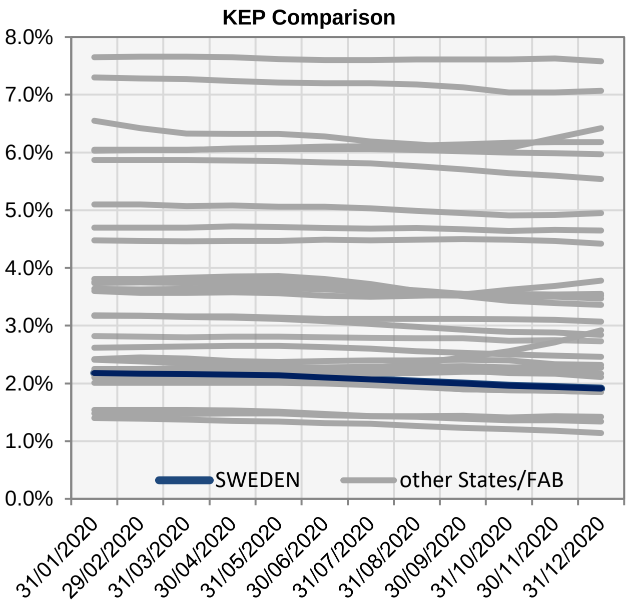
KEA	2020	2021	2022	2023	2024
Provisional target	1.26%				
Actual performance	1.03%				



End of month indicators evolution in 2020

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
KEA	1.27%	1.26%	1.25%	1.26%	1.25%	1.22%	1.19%	1.16%	1.13%	1.09%	1.07%	1.03%
KEP	2.18%	2.17%	2.16%	2.15%	2.14%	2.10%	2.07%	2.03%	2.00%	1.96%	1.94%	1.91%
KES	1.86%	1.85%	1.84%	1.84%	1.82%	1.79%	1.76%	1.74%	1.72%	1.70%	1.69%	1.68%



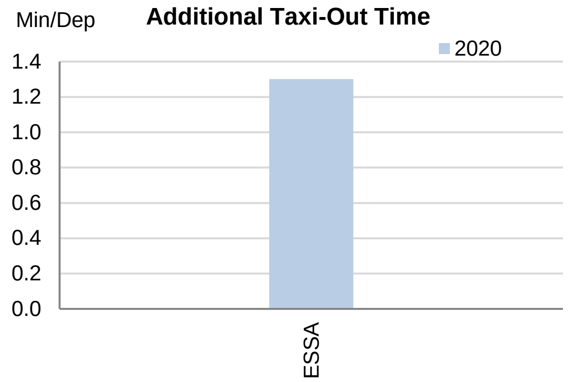


The indicators are the ratio of flown distance and achieved distance over all (portions of) trajectories over a one year rolling window, excluding the ten best and ten worst days. The rolling window stops at the last day of the month.

1. Overview

Sweden only has Stockholm (ESSA) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the environmental indicators can be performed. Traffic at this airport in 2020 decreased by 63% with respect to 2019.
Stockholm showed excellent performance in terms of additional times during RP2, and this performance further improved in 2020 with the reduction of traffic.
The share of CDO flights is relatively high compared to other airports monitored in RP3.

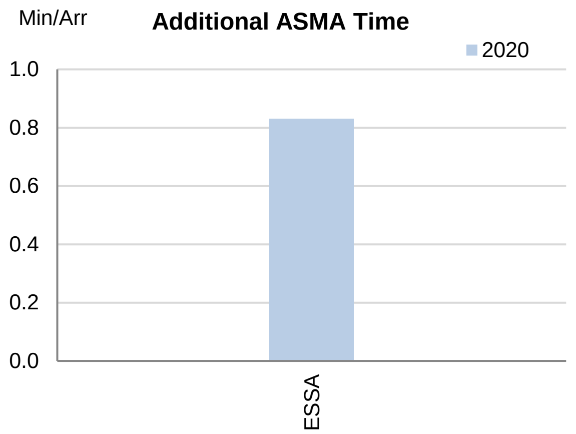
2. Additional Taxi-Out Time



The additional taxi-out times at Stockholm decreased by 37% (ESSA; 2019: 2.05 min/dep.; 2020: 1.3 min/dep.) with a sharp reduction from April until the end of the year, period in which these times averaged only 0.75 min/arr.

According to the Swedish monitoring report: *The airport operator (Swedavia) is currently executing a CDM project that aims to, among other things, improve this PI.*

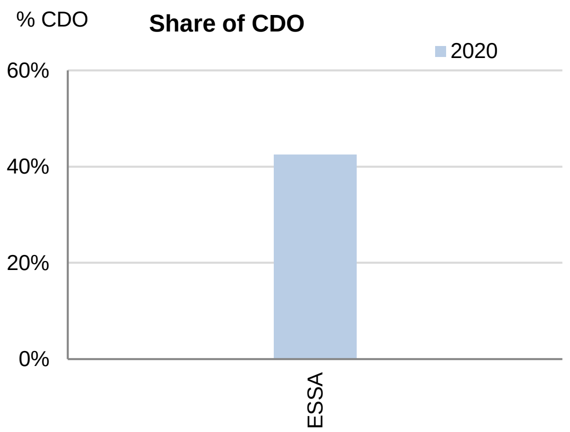
3. Additional ASMA Time



The additional time in the terminal area at Stockholm Arlanda was low and very stable around 1.2 min/arr during RP2. The traffic reduction in 2020 had a significant impact in the performance (ESSA; 2019: 1.15 min/arr.; 2020: 0.83 min/arr.), with additional ASMA times under 0.40 min/arr. between April and October.

According to the Swedish monitoring report: *LFV is currently starting up a major airspace overhaul project. One of the objectives is to improve the airspace around ESSA. LFV is monitoring the additional time for each individual arrival and will use that data in the aforementioned project.*

4. Share of arrivals applying CDO



The share of CDO flights at Stockholm (ESSA) is 42.5% which is above the overall RP3 value in 2020 (32.5%).

5. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

Airport Name	Additional taxi-out time					Additional ASMA time					Share of arrivals applying CDO				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Stockholm - Arlanda-ESSA	1.3					0.83					43%				

Update on Military dimension of the plan

Environment: FUA has been implemented in Sweden since 1978, before the concept was defined on European level and the benefit is already achieved, therefore its limitations to environmental factors are small.

Capacity: Sweden have an implemented extended FUA with the content that [doesn't create] limits in the capacity.

Military - related measures implemented or planned to improve capacity

Environment: No comment provided.

Capacity: No comment provided.

PI#6 Effective use of reserved or segregated airspace - national level

Ratio PI#6	2020	2021	2022	2023	2024
Sweden	10%				

PI#6 Effective use of reserved or segregated airspace (per ACC)

Ratio PI#6	2020	2021	2022	2023	2024
Malmo	22%				
Stockholm	21%				

Initiatives implemented or planned to improve PI#6

No comment provided. [No explanation of mismatch between national level (10%) and ACC level (21%).]

PI#7 Rate of planning via available airspace structures - national level

Ratio PI#7	2020	2021	2022	2023	2024
Sweden	N/A				

PI#7 Rate of planning via available airspace structures (per ACC)

Ratio PI#7	2020	2021	2022	2023	2024
Malmo	N/A				
Stockholm	N/A				

Initiatives implemented or planned to improve PI#7

No comment provided.

PI#8 Rate of using available airspace structures - national level

Ratio PI#8	2020	2021	2022	2023	2024
Sweden	N/A				

PI#8 Rate of using available airspace structures (per ACC)

Ratio PI#8	2020	2021	2022	2023	2024
Malmo	N/A				
Stockholm	N/A				

Initiatives implemented or planned to improve PI#8

No comment provided.

Minutes of ATFM en-route delay						
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.12					
Actual performance	0.01					

NSA's assessment of capacity performance

Performance is better than target as a result of the reduction in traffic. The delays reported refer to the period January - February.

Monitoring process for capacity performance

No comment provided.

Capacity Planning

No comment provided.

ATCO in OPS (FTE)

Malmo ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	156.8	155.8					Reporting according to the definition used in ACE.
Planned monitoring report		148.5					
Actual	148.5	147.5					

Stockholm ACC	2019	2020	2021	2022	2023	2024	Observations
Planned (Perf Plan)	169.1	166.1					Reporting according to the definition used in ACE.
Planned monitoring report		145.0					
Actual	145.0	143.0					

Application of Corrective Measures for Capacity (if applicable)

Nil

Summary of capacity performance

Sweden experienced a traffic reduction of 57% from 2019 levels, to 351k flights. The traffic level was accommodated with less than 3k minutes of en route ATFM delays to airspace users. Almost 80% of ATFM delays were attributed to ATC equipment in February 2020.

En route Capacity Incentive Scheme

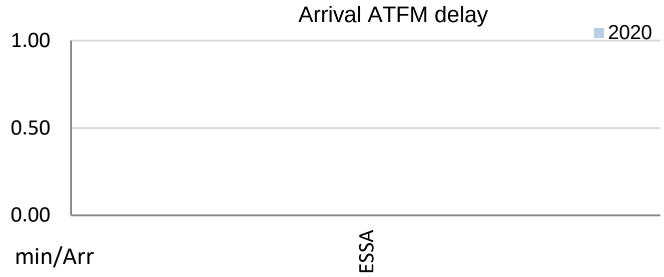
	2020	2021	2022	2023	2024	Observations
Provisional National Target	0.12					
Deadband +/-						
Actual	0.01					

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

1. Overview

Sweden only has Stockholm (ESSA) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause.
Traffic at this airport in 2020 decreased by 63% with respect to 2019. This drop in traffic also resulted in zero average arrival ATFM delay for Stockholm in 2020. The slot adherence was 98.1%.

2. Arrival ATFM Delay



Only 203 min of arrival ATFM delay were registered at Stockholm in 2020, in January, resulting in an average 0 min/arr for the year. This is a significant improvement with respect to the 0.32 min/arr in 2019.

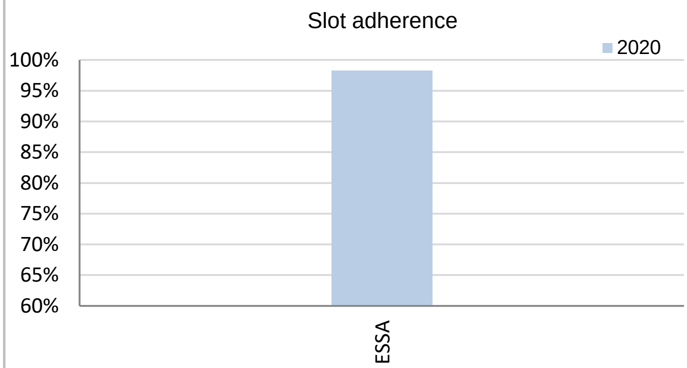
3. Arrival ATFM Delay – National Target and Incentive Scheme

	2020	2021	2022	2023	2024
Actual	0.00				
Target	0.35				

The provisional national target on arrival ATFM delay in 2020 was met.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4. ATFM Slot Adherence



With the drastic drop in traffic, regulated departures from Stockholm virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester.
Stockholm's ATFM slot compliance was 98.2%. With regard to the 1.8% of flights that did not adhere, 0.7% was early and 1.1% was late.

5. ATC Pre-departure Delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Stockholm.
However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.
However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:
- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)
To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.
Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Stockholm was above 40% between April and June 2020, preventing the annual calculation of this indicator, as there were only 9 months of valid data. Stockholm usually has proper reporting.

6. All Causes Pre-departure Delay

The total (all causes) delay in the actual off block time at Sweden in 2020 was 8.34 min/dep. The higher delays per flight were observed in May due to the lower traffic and extraordinary circumstances.

This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

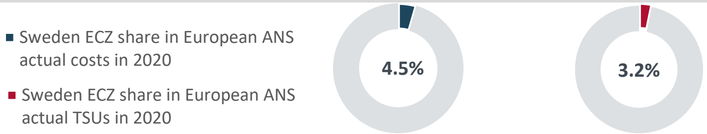
7. Appendix

n/a: airport operator data flow not established, or more than two months of missing / non-validated data

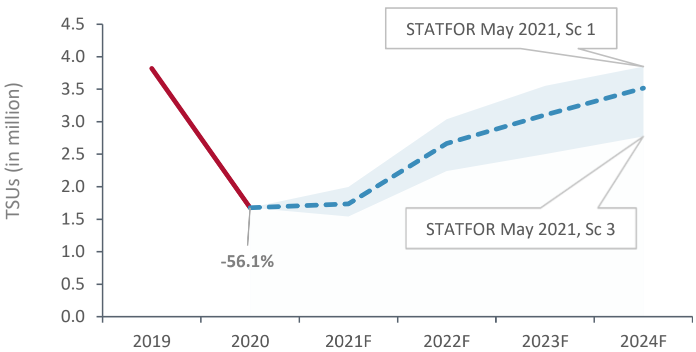
Airport Name	Avg arrival ATFM delay					Slot adherence					ATC pre-departure delay					All Causes Pre-departure Delay				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Stockholm - Arlanda-ESSA	0					98.2%					n/a					8.34				

Contextual economic information: en-route air navigation services

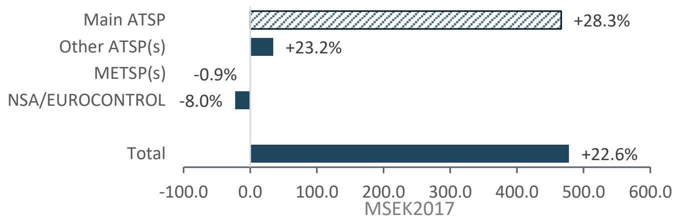
FAB:	DK-SE FAB
Main ATSP:	LFV
National currency:	SEK
Exchange rate:	1 EUR = 9.63311 SEK



Actual data from June 2021 Reporting Tables	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
En-route costs (nominal SEK)	2 744 476 403	2 179 365 205	2 693 623 562	-1.9%	+23.6%
Inflation %	0.8%	1.7%	0.7%	-0.1 p.p.	-1.0 p.p.
Real en-route costs (SEK2017)	2 643 293 806	2 118 904 893	2 596 726 409	-1.8%	+22.6%
Total en-route Service Units (TSUs)	1 607 000	3 820 393	1 676 463	+4.3%	-56.1%
Real en-route unit cost per Service Unit (SEK2017)	**1 644.86**	**554.63**	**1 548.93**	**-5.8%**	**+179.3%**
Real en-route unit cost per Service Unit (EUR2017)	**170.75**	**57.58**	**160.79**	**-5.8%**	**+179.3%**



Actual costs variation by entity at ECZ level between 2019 and 2020



Analysis at en-route charging zone level

In 2020, actual unit costs were lower (-5.8%) compared to those reported in the initial plans submitted in December 2020. This results from the combination of higher (+4.3%) actual TSUs and slightly lower (-1.8%) actual en-route costs in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in en-route TSUs recorded in 2020 (-56.1%) would not be recovered by 2024.

Between 2019 and 2020, the en-route unit costs of Sweden ECZ rose substantially (+179.3% in real terms) mainly due to the exceptional -56.1% traffic reduction. In the meantime, en-route costs significantly increased (+22.6%) in real terms.

The significantly higher en-route costs at CZ level are a combination of the following changes observed for the different entities: LFV - the main ATSP (+28.3%), the other ATSPs operating in the CZ (+23.2%), the MET service provider (-0.9%) and the NSA/EUROCONTROL (-8.0%). A detailed analysis of the changes in en-route costs at ATSP level is provided in the box below.

Breakdown of LFV en-route ANS costs (real SEK2017)	2020P (RP3 initial data, Dec. 2020)	2019A	2020A	2020A vs 2020P	2020A vs 2019A
Staff	1 655 534 018	1 137 697 621	1 682 135 645	+1.6%	+47.9%
Other operating costs	321 002 347	294 987 224	274 174 706	-14.6%	-7.1%
Depreciation	134 922 548	174 250 440	133 654 339	-0.9%	-23.3%
Cost of capital	19 178 726	39 850 530	23 176 831	+20.8%	-41.8%
Exceptional costs	0	0	0		
VFR exempted flights	0	0	0		
Total LFV en-route costs	**2 130 637 638**	**1 646 785 815**	**2 113 141 521**	**-0.8%**	**+28.3%**

Analysis at main ATSP level

In 2020, LFV actual en-route costs were slightly lower (-0.8%) compared to those reported in the initial plans submitted in December 2020.

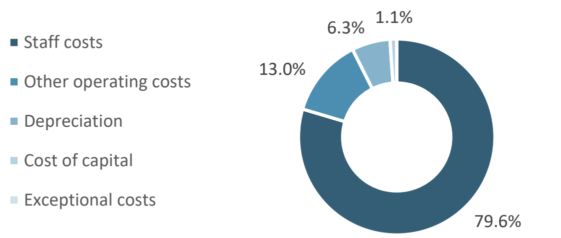
As indicated in the text box above, LFV actual 2020 en-route costs are significantly higher (+28.3%, or +466.4 MSEK2017) compared to those reported in 2019. This results from the combination of:

- significantly higher staff costs (+47.9%, or +544.4 MSEK2017);
- lower other operating costs (-7.1%, or -20.8 MSEK2017);
- significantly lower depreciation costs (-23.3%, or -40.6 MSEK2017);
- significantly lower cost of capital (-41.8%, or -16.7 MSEK2017).

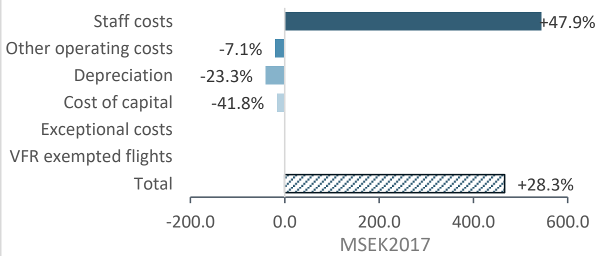
LFV implemented cost-containment measures that affected recruitment, over time, travelling expenses, consultancy services, postponement of ATCO training and general costs. The cost-containment measures also affected capital relating costs. As a result of a decision of the Swedish Government, cost of capital in 2020 was calculated without return on equity.

However, staff costs were higher in 2020 due to the pension technical recalculation resulting from the lower interest rate.

LFV actual 2020 en-route costs by nature

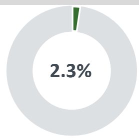


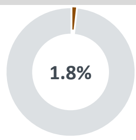
Actual costs variation by nature between 2019 and 2020



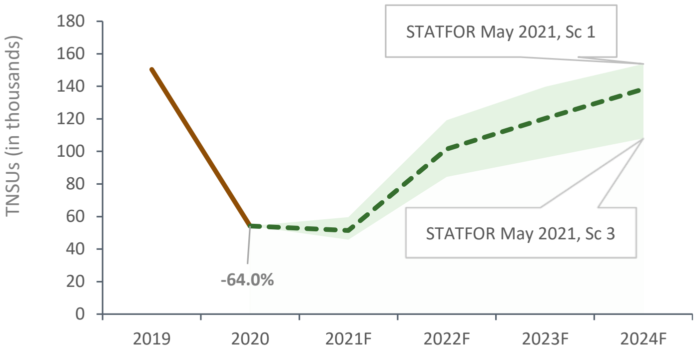
Contextual economic information: terminal air navigation services

Main ATSP:	LFV
National currency:	SEK
Number of airports in TCZ:	1

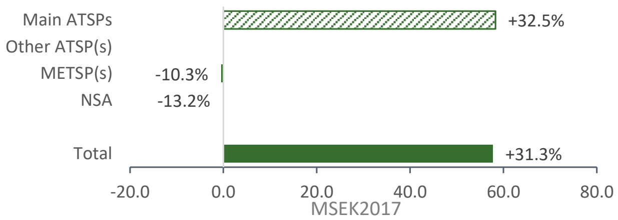




Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Terminal costs (nominal SEK)	191 167 283	252 718 128	+32.2%
Inflation %	1.7%	0.7%	-1.0 p.p.
Real terminal costs (SEK2017)	184 622 618	242 371 214	+31.3%
Total Terminal Navigation Service Units	150 405	54 147	-64.0%
Real terminal unit cost per Terminal Navigation Service Unit (SEK2017)	**1 227.50**	**4 476.16**	**+264.7%**
Real terminal unit cost per Terminal Navigation Service Unit (EUR2017)	**127.43**	**464.66**	**+264.7%**



Actual costs variation by entity at TCZ level between 2019 and 2020



Analysis at terminal charging zone level

Sweden TCZ comprises only Stockholm-Arlanda airport.

Between 2019 and 2020, the terminal unit costs of Sweden TCZ rose substantially (+264.7% in real terms) mainly due to the exceptional -64.0% traffic reduction. In the meantime, terminal costs significantly increased (+31.3%) in real terms.

According to the scenario 2 published by STATFOR in May 2021 (dotted line in the chart), the reduction in terminal TNSUs recorded in 2020 (-64.0%) would not be recovered by 2024.

The significantly higher terminal costs at TCZ level are a combination of the following changes observed for the different entities: LFV and Swedavia - the main ATSPs (+32.5%), see also Note 1 at the end of this report, the MET service provider (-10.3%) and the NSA (-13.2%). A detailed analysis of the changes in terminal costs at ATSP level is provided in the box below.

Breakdown of LFV and Swedavia Terminal ANS costs in TCZ (see Note 1) (real SEK2017)	2019A	2020A	2020A vs 2019A
Staff	111 613 798	168 079 179	+50.6%
Other operating costs	59 009 792	59 688 023	+1.1%
Depreciation	5 778 073	6 602 015	+14.3%
Cost of capital	3 018 477	3 348 154	+10.9%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total LFV terminal costs in TCZ	**179 420 139**	**237 717 371**	**+32.5%**

Analysis at main ATSPs' level (see Note 1)

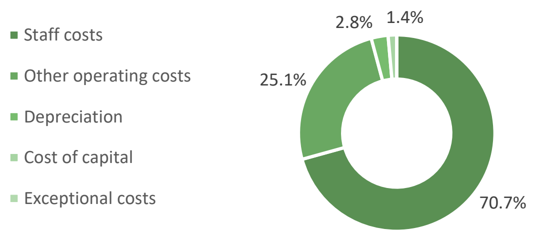
As indicated in the text box above, combined LFV and Swedavia actual 2020 terminal costs in TCZ are significantly higher (+32.5%, or +58.3 MSEK2017) than those reported in 2019. This results from the combination of:

- significantly higher staff costs (+50.6%, or +56.5 MSEK2017);
- slightly higher other operating costs (+1.1%, or +0.7 MSEK2017);
- significantly higher depreciation costs (+14.3%, or +0.8 MSEK2017);
- significantly higher cost of capital (+10.9%, or +0.3 MSEK2017).

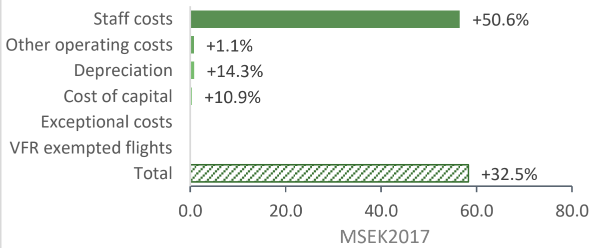
LFV implemented cost-containment measures that affected recruitment, over time, travelling expenses, consultancy services, postponement of ATCO training and general costs. As a result of a decision of the Swedish Government, cost of capital in 2020 was calculated without return on equity. However, staff costs were higher in 2020 due to the pension technical recalculation resulting from the lower interest rate.

Due to the current situation Swedavia implemented several COVID-19 response measures in 2020 such as a stop on filling vacancies, stop of non-critical operational activities and cost cutting program in general. Furthermore, the risk- and continuity plans, all operations and maintenance activities and all ongoing projects were reviewed to identify non-critical activities which were suspended.

LFV and Swedavia actual 2020 terminal costs by nature in TCZ



Actual costs variation by nature between 2019 and 2020



Aggregated analysis at en-route and terminal charging zone level

Actual data from June 2021 Reporting Tables	2019A	2020A	2020A vs 2019A
Real en-route costs (SEK2017)	2 118 904 893	2 596 726 409	+22.6%
Real terminal costs (SEK2017)	184 622 618	242 371 214	+31.3%
Real gate-to-gate costs (SEK2017)	2 303 527 511	2 839 097 623	+23.2%
En-route share in gate-to-gate costs (%)	**92.0%**	**91.5%**	**-0.5 p.p.**

Analysis of costs at gate-to-gate level

Between 2019 and 2020, the gate-to-gate costs for Sweden significantly increased (+23.2%, or +535.6 MSEK2017) in real terms. This is a combination of a significant increase (+22.6%, or +477.8 MSEK2017) in en-route and much higher (+31.3%, or +57.7 MSEK2017) terminal ANS costs in real terms.

The share of en-route in gate-to-gate ANS costs in 2020 (91.5%) slightly reduced (-0.5 p.p.) compared to the figure reported in 2019 (92.0%).

Breakdown of LFV and Swedavia gate-to-gate ANS costs (see Note 1) (real SEK2017)	2019A	2020A	2020A vs 2019A
Staff	1 249 311 419	1 850 214 824	+48.1%
Other operating costs	353 997 015	333 862 729	-5.7%
Depreciation	180 028 512	140 256 354	-22.1%
Cost of capital	42 869 007	26 524 985	-38.1%
Exceptional costs	0	0	
VFR exempted flights	0	0	
Total LFV gate-to-gate costs	**1 826 205 954**	**2 350 858 893**	**+28.7%**

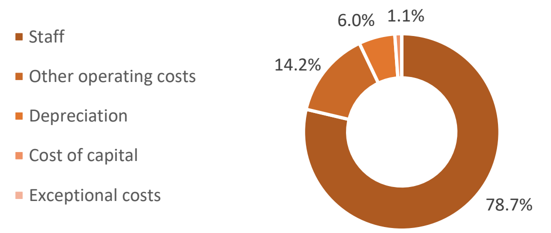
Analysis at main ATSPs' level (see Note 1)

Combined LFV and Swedavia actual 2020 gate-to-gate costs are significantly higher (+28.7%, or +524.7 MSEK2017) than those reported in 2019. This results from the combination of:

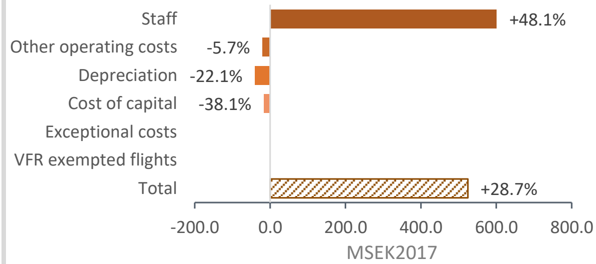
- significantly higher staff costs (+48.1%, or +600.9 MSEK2017);
- lower other operating costs (-5.7%, or -20.1 MSEK2017);
- significantly lower depreciation costs (-22.1%, or -39.8 MSEK2017);
- significantly lower cost of capital (-38.1%, or -16.3 MSEK2017).

Details on the drivers behind the changes observed above are provided in the respective analyses of LFV at en-route and combined analysis of LFV and Swedavia at terminal charging zone level.

LFV and Swedavia actual 2020 gate-to-gate costs by nature



Actual costs variation by nature between 2019 and 2020



Notes on data and information submitted by Sweden

Note 1: ATSP costs reported in terminal Reporting Tables

It is noteworthy that no depreciation costs and only small amount of cost of capital costs are reported for LFV in the terminal Reporting Tables. These costs are fully borne by the airport operator (Swedavia) owning the CNS infrastructure used by LFV to provide terminal ANS in Swedish TCZ.

For compliance with the regulation, it is required to present the costs of the different ATSPs and other entities (i.e. here the airport operators) separately. For this reason, the costs of the main terminal ATSP (LFV) and airport operator (Swedavia) are recorded separately in the terminal Reporting Tables.

However, for the purposes of monitoring in Swedish TCZ, the costs of LFV and Swedavia are combined and presented as “Main ATSPs”. This treatment also affects the analysis of ATSP costs at gate-to-gate level.